FOOD GRAINS PRICE STRATEGY IN INDIAN PLANNING

THESIS

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TO

MY FATHER

UNERRING SOURCE OF WISE COUNSEL

PREFACE

PREFACE

Development planning may get thwarted, if not completely defeated, by instability that may develop from rising prices, particularly those of foodgrains. Agricultural development is central to all strategies for planned socio-economic development in India. The strategy of economic reform and regeneration in India can succeed only with sustained and broad based agricultural development. Such a development is critical for raising general living standards, alleviating rural poverty, assuring food security, generating a buoyant market for expansion of industry and services and making a substantial contribution to the national export effort. Agriculture can work as the biggest safety-net in the process of structural adjustment and reforms by softening the rigours of inflation as well as by raising income and employment for the vulnerable sections of the population. Broadening the domestic agricultural base by infusing new dynamism through public investment in infrastructural development and a much greater impetus for private investment holds the key to realisation of possible gains from trade as well as to ensuring that such gains are widely shared by different regions and classes of farmers. The need to reorient the agricultural policy may be viewed in the context of uneven agriculgtural development in both research and production, across regions and crops inspite of several-fold increase in agricultural production during the last four decades.

An attempt to arrest the declining trends in capital fromation in agriculture would require channelising of the resources towards capital formation and infrastructural building. Further, an economic climate would have to be created for increasing farmers' own investments and efforts through a favourable price and trade regime. For inducing the farmers to invest in yield raising infrastructure and to use modern

inputs, apart from maintaining a fovourable price climate, it would be necessary to improve the performance of domestic market for agricultural products, increased access of the farm sector to the world market and more effevtive implementation of the price support policy. With the objcetive of ensuring reasonable returns to the farmers to promote investment by them in farm enterprises, apart from taking certain non-price measures, the minimum support prices for various agricultural commodities are fixed by the Government each year on the basis of the recommendations made by the Commission for Agricultural Costs and Prices (CACP). Together with the introduction of improved technology and delivery of services, price support strategy followed by the Government of India has succeeded in taking agricultural sector ahead and making the country self-sufficient in foodgrains. The Commission for Agricultural Costs & Prices (CACP) has been advising the Government on the price policy of selected agricultural commodities with a view to evolving a balanced and integrated price structure in the perspective of the overall needs of the economy and with due regard to the interests of the producer and the consumer. Over the years, the Commission has helped in the evolution of a stable and positive price policy for agricultural commodities. The minimum support prices for various crops sown during 1994-95 were fixed by the Government after considering the recommendations of CACP, the views of the State Government and Central Ministries.

The intervention of government in Indian agricultural scene through, fixing of minimumn prices for the important/major commodities based on average cost pricing , enforcing market regulations for fetching better prices to the producers, and bringing more agricultural commodities under market regulations for controlling the price movements, has brought changes in the commodity price behaviour. Such intervention has

improved the marketisation of agricultural commodities and inter-commodity price integration. An attempt on determining the impact of such intervention on the price behaviour, particularly food and commercial crops which vary by its commodity nature, is a difficult task.

The rural dynamics in our country has many facets amongst which the potential for food production and modernisation/improvisation of the techniques to maximise output are directly dependent upon a dynamic price policy which the country has to evlove and sustain. The inter-play of forces is so complicated, yet so interesting, that any student of rural economy would appreciate that the price policy in relation to foodgrains not merely influences the decision making process amongst the farming community on their production commitments but it also has a cascading effect creating a demand climate for such production as well as relatively influence the movement of price fluctuations and allocation of production resources, which in turn determines the levels of foodgrains production.

The present research work initiates the discussion on foodgrains prices. It is a pioneering effort in studying the food production trends, prices and polcies of the government during the past four decades. The Public Distribution System, Agricultural Price Commission (APC) and the Agricultural Policy in the wake of GATT with the object to assess their impact on distribution of foodgrains, farm production and foodgrains prices in the economy have been thoroughly reviewed. More over the relevance and the usefulness of the price theory in determining the foodgrains prices and fluctuations in the prices of foodgrains has been enlighted and a dynamic foodgrains policy for the coming years which should provide guidlines to economic planners, policy makers, researchers and the academic in the country, has been suggested.

The role played by the agricultural prices in the process of economic development and in determining its stability, is presented in an intergrated and critical manner in this research work and as is evident, this work is the result of a close intellectual look on the subject, presented in a comprehensive manner and the main theme of the thesis relates to the study of trends in price of foodgrains in India during a particular plan period.

It is argued that the policy measures taken for counteracting the effects of imbalance in agriculture in India are at best palliatives and the strategy of the planners must be to remove this imbalance formulating policies based on the study of causal factors of instability arising from differnt agricultural commodity prices and the responses of agriulture to them.

The study entitled, '<u>Foodgrains Price Strategy in Indian Planning</u>' has been organised into nine chapters viz. 'Introduction, Review of literature' , over view of Foodgrains Production, Prices and Policy During the Planning Era', 'Agricultural Price Policy -views and reviews,' ' Instruments of Agricultural Price Policy -Performance Appraisal', 'Relevance of the Theory of Price Determination to the Agricultural Market ', 'Foodgrains prices in India -Their Emerging Trends and Determinants ', 'Agricultural Policy of India in the wake of GATT ' and 'Summary of Findings, Conclusion and Suggestion.'

I have presented the ideas that have occured to me during the course of my research and I would like to place on record my gratitude to many people who have guided and assisted me in very many ways and enabled me to successfully complete the research project.

I am indeed most grateful to Dr. S.P. Bhatnagar, Reader & Head, Department of Economics, Atarra Post Graduate College, Atarra, (Banda),

who inspired me to commit myself to this task and further guided and supervised my effort with a strict but kind outlook. It was he who evoked the interest for research work in me and moulded my attitude for a sustained and systematic endeavour on my part. Dr. Bhatanagar's kindness and keenness and critical yet constructive approach helped me at every stage. But for him, I would not have been able to fulfil adequately this intellectual exercise.

The names appearing in the text and in the footnotes of the work are indicative of my great obligations to the works of different individuals and different specialised agencies and institutes, making studies and conducting surveys on different segments of Foodgrains Price Policy. I acknowledge my grateful thanks to the librarians of the following libraries and their staff for providing necessary facilities. Atarra College, Atarra, Indian Council of Social Science Research, The Institute of Public Administration, Institute of Economic Growth and Planning Commission, Government of India-New Delhi.

I shall be failing in my duty if I do not acknowledge my gratitude to my wife and members of my family who gladly relieved me from my share of domestic affairs, but also encouraged me to complete this most difficult part of my education.

December , 1995 Narender Kumar Jain

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INTRODUCTION

C H A P T E R - I

INTRODUCTION

AGRICULTURAL PRICES : Prices, in general, play an important role in the entire economic system but the prices of agricultural commodities have an added significance in a country like India where majority of population devotes almost two-third of its expenditure to food alone. A rise in agricultural prices without corresponding rise in income would consume greater proportion of the expenditure, leaving thereby a little margin for other necessities of life. On the other hand, rising agricultural prices will not materially help the Indian farmers. Since majority of farmers have marginal and small holdings and rise in agricultural prices does not evince any favourable impact on their income as they have little to sell. Jain, in this connection remarks, " Raising of agricultural prices, however, does very little to help the poor farmer because the main problem still remains that they have very little to sell, because they produce very little.[1] Declining farm prices are still more serious since the real income of the farmers goes down as a result of which the demand for manufacturers automatically comes down. Hence, in a poor country like India, where about two-thirds of population is engaged in agricultural pursuits. " Price oscillations hit hard the millions of under-privileged people in the country."

Besides affecting expenditure pattern, agricultural prices also play a prominent role in determining the production pattern, not only of agricultural sector but of many manufacturing industries which depend on agriculture for the supply of their raw materials. Prices can also shape the desired cropping pattern and bring about changes in agricultural production in accordance with the objectives of national economic policy. Further agricultural prices also affect the prices of

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1. Jain, S.C. : Agricultural Policy in India, Allied, Bombay, p. 70.

those consumer goods like textiles, sugar, cigarettes etc. in the production of which agricultural raw materials are used. Indirectly agricultural prices have a strong bearing on the general price level in the country.

The combination and transformation of resources or inputs results into the production of food. Here we have two factors: (i) Resources as independent factors and (ii) Food as the dependent factor.The relationship between the physical resources and food as an output is called production function. Hence, when we talk about food policy in a broader sense, we have to consider resource situation, food production and prices together.

FOOD PRODUCTION AND ITS SUPPLY : Questions of the total food production and its supply are of concern to all individuals whether or not they are producers of food. Supply functions, of course, are of particular interest to policy-makers who have to administer the food policies and programmes. The explanation of the nation's food supply policies is to be explained in the production function of agriculture, the structure of input and food prices and the prices response of individual farmers. The food products which cultivators produce at a particular time is not the function of price at that time but of earlier decisions. The food supply of any year is affected by weather conditions prevailing in different parts of the country.Some regions suffer from drought or flood and others have favourable weather conditions : Famines and scarcity in India during the nineteenth century were mostly due to the lack of transport facilities in moving food from the good harvest area to the scarcity region. Because of the lack of any significant pressure of population on land, there was a static equilibrium between demand and supply of foodgrains. In fact, the country had some marginal surplus for export. In this connection, the Census of India Report, 1951 presents the following picture: About 1880 the country was surplus

in foodgrains to the order of 1.2 million tons. Even in the famine years 1896-97 and 1880-1900, the country exported 1.5 million tons of foodgrains respectively.

But since the beginning of the twentieth century, the country's export began to dwindle and in some years it had to import to meet the demand of growing population. With the separation of Burma from India in 1937, the internal supply of rice which used to be supplied by Burma was cut-off and the country began to import rice from that country. In 1940-41 and 1941-42, the net imports were about 1 million ton and 0.5 million tons respectively. With the invasion and occupation of Burma by the Japanese during 1942-45, the import of rice was discontinued and the country faced a grave food situation with the crop failure in Bengal.

THE CONTEXT : Before the Mid-sixties of this century, the activities of the government in the foodgrain economy were limited in scope to the import of grain and its distribution (mainly in the urban areas under various forms of rationing) during periods of food scarcity following poor harvests. Thereafter, however, with the adoption and promotion of the 'new agricultural strategy.' based on the cultivation of high-yielding varieties of seeds with the use of 'modern' inputs (fertilizers, pesticides, etc.) in areas of assured water supply, the government began to play a major role in the transformation of the agricultural sector. This lead to the involvement of the state in diverse activities such as the development of infrastructural facilities, provision of subsidies of different kinds, supply of inputs and credit, and the promotion of agronomic research for the adaptation of exotic crop varieties to Indian conditions.

The agricultural price policy which evolved subsequently must thus be seen as an essential part of a larger 'package' of policies designed to promote rapid growth in a few regions endowed well with irrigation

facilities, and to encourage private investment in the necessary means (modern inputs, tubewells, farm machinery, etc) for the cultivation of the new varieties. It can be argued that, given the highly skewed distribution of land and assets and a marked regional concentration of irrigated areas, the package was bound to promote both inter-regional and intra-regional inequalities. For this reason, one can perceive a built-in regressive character in the price policy and locate it within the overall policy of promoting growth through various production incentives - a policy which is not based on sufficient consideration of its likely distributional consequences.

FACTORS INFLUENCING CHANGES IN PRICES : Prices of agricultural commodities are affected bymany factors which can mainly be classified as (a) demand factors and (b) supply factors.

DEMAND FACTORS : Demand for agricultural commodities is influenced by many factors. Four important factors which influence the household demand for agricultural commodities are listed here.

These are (I) **PRICE OF A COMMODITY :** Households' demand for an agricultural commodity is influenced by the price of that commodity. Usually the higher the price, the lower will be the quantity demanded (ii) **PRICES OF RELATED GOODS:** It is also influenced by the changes in prices of related commodities. In some cases the demand for one commodity will increase, as the price of another commodity increases (when the commodities are close substitute). While in other cases the demand for one commodity may decrease as the price of another commodity incrases (when the commodities are complementary). (iii) **TASTES, HABITS AND FASHION:** A household demand for agricultural goods is also influenced by the tastes, habits and fashion prevailing in the society at a particular period of time. (iv) **INCOME:** Demand for agricultural goods is also influenced by the household income. In most of the cases

the larger the income the greater the quantity demanded. But this rule may not always be true in case of agricultural goods. Since most of agricultural goods are necessities of life and their demand is limited by the extent of human stomach, a rise in income or the household may not result in increase in the demand for such goods. On the other hand, rise in income above a particular level may cause a decline in the demand for agricultural goods.

Thus we find that the amount of agricultural commodity, a household is prepared to purchase, is a function of the prices of the goods in question, the prices of other goods, the household's income and its tastes and habits.

FACTORS INFLUENCING SUPPLY: Factors which influence the supply of agricultural commodities are numerous. Given below is a brief introduction to these factors:

(i) The supply of an agricultural commodity would depend upon its cost of production, that is the prices of factors of production which are involved in the production of said commodity. For example, a rise in the price of land will have a large effect on the cost of producing wheat. Thus a rise in the price of factors of production will cause the supply of the production to decline and a fall in the prices of the factors of production may lead to increase in the supply.

(ii) Supply of an agricultural commodity is also affected by the price that commodity commands in the market. Other things remaining same, the higher the price of the commodity, the more profitable will it be to increase its supply.

(iii) The supply of an individual agricultural commodity will be affected also by the prices of other agricultural goods. An increase in the price of other commodities will make the production of the commodity whose price has not risen relatively

less attractive than it was previously. This mainly leads to changes in cropping pattern in agriculture.

(iv) Supply of agricultural goods also depends upon the state of technology. The agricultural technology helps in bringing down the cost of production and hence increases the supply.

(v) There are a number of other factors which affect the supply of agricultural goods, viz., adequate and well spread out rainfall, improvement in irrigation facilities, increased supply of chemical fertilizers and manure and better and improved methods of production.

We may summarise the above discussion as follows: The supply of an agricultural commodity is a function of the price of that commodity, the prices of all other agricultural goods, the prices of the factors of production, technology, and the natural factors.

PRICING OF AGRICULTURAL COMMODITIES: Agricultural commodities possess, more or less, a uniform price behaviour due to the seasonality in nature. The price behaviour of the agricultural commodities based on the traditional theory of supply and demand conditions, even at macrolevel, is subject to several doubts. Due to the seasonal behaviour of agriculture, it can be viewed that during peak arrivals, the prices would be low and vice versa. However, the demand is spread over throughout the year. In these circumstances, the validity of the determination of the price of an agricultural commodity based on aggregate demand and supply conditions at a given time, i.e., a day, a week, a season or a year is questionable. The blowing up of demand and supply at various time periods to a macro level for uniformity, in fact, results in a hazardous situation leading to an imperfect pricing system, in which either final producer or final consumer or both would be adversely affected.

Further there has been a increasing recognition of the need to keep a control on price movements of agricultural commodities during plan periods. Any effort to control and regulate the prices requires continuous study of price behaviour and inter-temporal changes associated with them. For any sound price policy, a study of price behaviour is an essential prerequisite. Prices act an an instrument of efficient allocation of resources, distribution of income and capital formation to accelerate growth.

In view of the adverse conditions in India agricultural scene the intervention of government through (i) fixing of minimum prices for the important/major agricultural commodities based on average-cost pricing, (ii) enforcing market regulations for fetching better prices to the producers by removing exploitative market practices and (iii) bringing more agricultural commodities, under market regulations for controlling the price movement, has become inevitable. Mellor (1972)[2] argues that the most effective means by which government can improve the pricing system of agricultural commodities is through improved marketing facilities which is the result of the enforcement of market regulations in India. Examination of time series data of prices of agricultural commodities through secular trend and seasonal fluctuations helps in guiding the farmers in taking decisions about production and marketing.

The three main factors which contribute to price fluctuations in agricultural commodity prices are:
(1) relatively low price elasticity of demand for agricultural commodities, (2) biological nature of agricultural production, and (3) seasonal nature of agricultural industry, where output become available at a particular time in a year. This affects the farmers' income to

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2. John W. Mellor : The basis for Agricultural price policy, A/D/C/Monograph no, 22, November 1972, pp. 1-4.

fluctuate. Consequently, the farmer's incentive to invest more in farm enterprise to enhance future production will be dampened. In turn, this will adversely affect the long-run supply. On the other hand, as the result of serious short fall in production and in marketed surplus, unrestrained raise in agricultural prices would affect the levels of living of the consumers and the people in the other sectors of the economy. Further, as economic development proceeds, the demand for products being income inelastic relative to the demand for non-farm products, does not rise as fast as for industrial goods and services. For these reasons government's intervention for price stabilisation becomes necessary. Thus, the major objective of the Indian price policy is to stimulate agricultural production and to keep check on the rise in cost of living and industrial cost. However, it was only in 1977, the stress was laid on the concept of parity prices to improve farm income stabilisation and terms of trade between agricultural and other sectors.

The dominant aspect of Indian economy is still agriculture, where three quarters of population depend on agricultural sector for occupation, and generate nearly a half of the national income. So much so, even though agriculture may use little capital per worker, it commands a high proportion of the total capital resources. This is the characteristic not only of India but of all the developing countries of the world. The over-emphasis of 'industrial fundamentalism' ignoring the dominant agricultural sector in these countries, may not be therefore justified. On the other hand, there is every justification for 'agricultural fundamentalism' in India where there is the threat of population explosion, the state of poor human nutrition and the need to feed growing numbers of hungry people. Hunger spreads from latent deficiencies due to conditions of malnutrition and under nourishment and makes population planning extremely difficult unless there is a

quantitative increase and a qualitative improvement of food-grains' production. This is a situation common to all developing countries where food production is less than the demand.

In low income countries like India, agricultural productivity and incomes are extremely low and therefore,both the quantity and quality of food consumed are also low. Food intake of a major sections of the population is so restricted that even the calorie intake is insufficient for normal growth and activity. Even those people who have enough food, calorie-wise, however, have a diet which is lacking in important qualitative features. As a result , health is impaired, resistence to disease is lowered, and capacity to work is reduced. Food policy, therefore, becomes very important in the alround development of a developing country like India, as it helps, among other things, rise per capita food intake.

Per capita food intake is of special importance because of (a) its direct effect on human welfare and happiness, (b) its indirect effect on output through influence on the capability of man to perform work, and (c) its indirect effect on per capita income through influence on death rates and hence on population growth. Secondly, it should not be forgotton that the rate at which industrial development-cum-urbanisation takes place is necessarily preconditioned by the rate of increase in the supplies of marketable surplus of foodgrains. Thirdly, a developing economy, while expanding its industrial base, requires a qualitative and quantitative increase in foodgrains production for feeding for working force. Fourthly, huge investment in the sphere of basic industries may create a capital scarce situation to other consumer goods industries and food grain production. This situation may necessitate the country to give more importance to agriculture in the initial stsages of development to take care of enhanced demand for

foodgrains on the one hand, and on the other to generate enough surplus capital to provide for the investment demand of other sectors.

In India, at present the food consumption level is not only being influenced by the growth of population but also by the improvement in per capita income caused by increased investment activities under the Five Year Plans. This is resulted in the human nutrition and human welfare problems of vast proportions. Unfortunately, we do not know to what extent economic activity is reduced by poor diets still prevailing in our country. Human energy is so restricted in India by malnutrition as to significantly retard the development process, and an increase in agricultural production and resultant improvement in diets might in itself have a significant effect on overall production and development. Improved diet may have an even greater effect on human attitudes and aspirations than on purely physical work capacity. In view of all these factors, as India is a welfare state, any planning efforts should accord the highest priority to remove hunger; hence, arises the importance of a qualitative-cum-quantitative increase in food grains' production.

TWO IMPORTANT DETERMINANTS OF DEMAND FOR FOOD: As far as the food requirement is concerned, there are two important factors which determine the effective for food. Rapid increase in population is the primary factor which determines the demand for food. Demand for food and growth in population are directly and strongly related. The other important factor which has an influence over the demand for food is growth of incomes. A rise in per capita income in low-income countries is associated with a substantial rise in the demand for food. Indeed, at certain stages of development the income effect on demand for food may be more important than the population effect.

NEED FOR AGRICULTURAL PRICE POLICY: As stated earlier, agricultural prices fluctuate violently and frequently under the free market

mechanism to the disadvantage of both the producers as well as the consumers. These fluctuations in the prices of agricultural products are the greatest hurdle in the way of agricultural development for they bring ruin to many. For instance, in bumper crop years, prices fall too low to leave farmers any better off and in light crop years, prices rise steeply but the farmers have very little marketable surplus. Similarly persistent imbalance between supply and demand causes violent fluctuations in consumer prices and thus affects the poor consumers. The two major aspects of the price policy, therefore, are (1) to protect the farmers' interests by removing or at least mitigating the major uncertainties by assuring the farmers remunerative prices of their produce, and (2) to safeguard the interests of low income consumers by assuring minimum supplies of food articles at reasonable prices.

IMPORTANCE OF PRICES AND PRICE POLICY: The relative structure of prices influences the allcoation of productive resources, and, thereby the levels and composition of production. Price relationships effect relative profitability and economic incentives. Relative profitability is a function of the physical productivity of resources in various uses as well as of the relationship among prices of inputs and outputs. Therefore, dynamic price policy, in conjunction with other policies (which increase the productivity of resources) plays an important positive role in the modernisation process and in bringing about optional allocation of scarce resources in the economy.The structure of prices in a free market economy is a result of the general equilibrium process that is expected to operate very efficiently in such markets. However, the market imperfections coupled with socio-economic objectives of the modern governments deliberately intervening the market process of adjustments, such interventions are generally intended to ensure that the scarce resources are not frittered away in the short run for the benefit of a few dominant sections of the society

and to tune the production mechanism to meet the needs of defence production, the objective of achieving socio-economic equality and balance of trade and payments commitments. The interventions are through price policies, licensing policy and distributive controls.

In a developing country like India, the production and distribution of foodgrains and other agricultural commodities need to be effectively controlled. Acute shortages and surpluses of foodgrains owing to the vagaries of monsoon, coupled with a rapidly growing population, makes administration of agricultural production and distribution a very unenviable task. Without any intervention, the agricultural markets are likely to become extremely volatile with wide variations in the production and prices of agricultural goods. Both the producers of agricultural commodities and the consumers are likely to be put to enormous hardships by such wide fluctuations. The steep fall in agricultural prices reduces the incomes of the farmers and adversely affect their standards of living. Similarly, the huge increases in the prices of foodgrains affect the consumers. Therefore, there is need for the intervention of the state in the agricultural markets. The intervention should be aimed at stabilisation of prices of agricultural commodities and through them incomes of the agriculturalists. Such policies would also be helpful in maintaining and improving the standards of living of consumers.

The price stabalisation policy has a dynamic role to play, especially in low-income countries like India. For example, uncertainty regarding future prices has an effect on the level and pattern of foodgrains production. Price expectations guide the agricultural production. To the extent the price expectations fail to materialize, the agricultural production may turn out to be in excess or short of actual demand at the actual prices causing difficulties to the producers and consumers

of agricultural commodities. Although farmers know that prices fluctuate, their incapacity to anticipate the direction and extent of price changes with reasonably low errors leads them to take wrong production decisions. In view of the uncertainties regarding the price changes, the farmers are forced to take decisions with great risk.

Thus, if two commodities have quite different degrees of uncertainty regarding prices, the one with the greatest uncertainty will tend to be discounted more than the other crop, with a consequent relative production emphasis on the lower risk crop. In this situation, relative changes in uncertainty for different crops is likely to result in relative changes in their production.Thus, if it is desired to increase production of a crop for which there is considerable price uncertainty, then a price guarantee programme for that crop will tend to increase its production relative to other crops, just as would be the case of a price increase. As across-the-board set of price guarantees can also be expected to result in a relative increase in the production of those crops for which the risk and uncertainty had previously been the greatest. And further, price instability in low-income countries necessitates formulation and implementation of appropriate price stabilisation programmes for the purpose of reducing price risks. All these factors testify to the urgent need for an imaginative price policy for agricultural commodities in a country like India, where the primary sector is a dominant sector. Appropriate and imaginative price policy for foodgrains can play an important role in ensuring lucrative prices to the farmers and at the same time adequate supply of foodgrains at reasonable prices to the vast population living below the subsistence level.Price Policy designed to increase the production within the context of traditional agriculture suffers from three major disabilities.

(1) The necessary policies will tend to be inconsistent with other and perhaps more basic goals of economic development.

(2) The appropriate devices for effecting price increase may be difficult to organise and administer.

(3) Even if the desired policy can be executed, it will tend to be effective in raising the aggregate of production.

An imaginative price policy therefore has to be evolved within these constraints.

FUNCTIONS OF AGRICULTURAL PRICES: Agricultural prices have three distinct functions, viz., (i) efficient allocation of resources, (ii) bringing equality in income distribution and (iii) inducing the capital formation.

Agricultural prices give signals to both producers and consumers regarding the level of production and consumption. Changes in the relative prices of the various agricultural commodities affect the allocation of resources among agricultural commodities by the producers are allocation of expenditure on consumption of these commodities by the consumers. If the price of a given commodity increases relatively to all other agricultural commodities, then the producers would be allocating more resources, i.e., land and other inputs, for the production of that commodity.[3] On the other hand, agricultural prices determine the farmers income and effect the levels of living of the people engaged in the other sectors of the economy, as agricultural commodities form part of wage goods. Thus, it is recognised by the economists that agricultural prices do effect income distribution among the different product-producers and between the different sectors of the economy.

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(3) K.Uma Shanker Patnaik : " Groundnut farm economy in alternative market channels, " Indian Jounal of Agricultural Economics, 42(4) October-December 1987, 595-603.

Given the functions of agricultural prices, the implication of wide fluctuations remains that the income of producers would fluctuate more than the fluctuations in output. Consequently, the producers' price will be depressed in the short run and producers' inducement to invest in farm enterprises to enhance the future production will be dampened. In turn, this will adversely affect the long-term supply.Further, as economic development proceeds, the demand for farm products does not rise as fast as that for industrial goods and services owing to low income-elasticity of demand for farm products. For these reasons the views of Schultz were endorsed.[4] Schultz believes that there is no way of organising and integrating the production activities of numerous farmers among one another and with the rest of the economy,except by a system of prices.Thus, the government's intervention through agricultural price guarantees of one type or another has become necessary.

OBJECTIVES OF PRICE POLICY: In India,being a developing economy, Raj Krishna[5] views that the role of positive price policy should be the part of a growth policy: (a) to accelerate the growth of agricultural output as a whole, (b) to accelerate the growth of output of different crops or in the context of planning to promote optimum crop mix according to target, and (c) to ensure adequate increases in the market supply of food crops in countries like India, where a large part of output is retained for home consumption. S.K.Ray, et al, (1977)[6] and A.S.Kahlon (1980)[7] identify the goals of production-oriented

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4. T.W. Schultz, " A comment on Mellor's Towars a Theory of Agricultural Development" in H.M. Southworth and B.F. Johnston (ed), Agricultural Development and Economic, Cornell University Press, 1967.

5. Raj Krishna, " Price policy and Economic Development" in H.M. Southworth Growth, Cornell University Press, 1967.

6. S.K.Ray, J.T. Cummings, et al., Policy Planning for Agricultural Development, McGraw-Hill, New Delhi,1977.

7. A.S.Kahlon," Agricultural prices Commission, Role and Functions , " Agricultural Prices Commission, Department of Agriculture, Government of India, 1980.

price policy as : (a) stability in relative prices in the short-run, (b) stability in terms of trade in medium run, and (c) adjustment of all the prices to their equilibrium level in the long run. However, the allocative role of agricultural prices get carried into the terms of reference of the Agricultural Prices Commission (APC) when it was set up in 1955. Thus, the APC emphasised on the need to (a) provide incentive to the producer for adopting improved technology and for maximising production, and (b) ensure rational utilisation of land and other production resources. Therefore, since 1965, the main objective of the agricultural price policy has been to ensure an incentive price to farmers. So, the objective of the Indian price policy was to stimulate agricultural production and obtain price stabilisation in agricultural commodities.

The major objective of the agricultural price policy is to achieve price stability without destabilising total revenue of the farmer and provide a price support which would be economic to the grower as well as agro-based industry and at the same time subserve the interests of the consumer. In other words, the intention is to integrate support prices with policies to stabilise prices and supplies to consumers. In the developed countries like the U.S.A., Canada and Western Europe, where the farm incomes have badly lagged behind non-farm incomes in the process of economic growth, the main objective of price policy is to rise farm incomes so as to bring them in line with the income levels in the rest of the country. In the underdeveloped countries, however, the income-oriented price policy of the developed countries has not much direct relevance. In poor countries the problem is not over production. In these countries the objective of farm price policy, therefore, should be to increase agricultural production by creating economic incentives for farmers.The policy should be able to perform the

following functions.[8]

1. To accelerate the growth of agricultural output as a whole.
2. To stabilise prices in order to prevent fluctuations.
3. To bring about desired changes in product mix.
4. To increase the marketed surplus.
5. To ensure adequate supplies of foodgrains to the low income consumers at reasonable prices.

Thus Price Policy must ensure that agricultural production is economic both in the widest and in the strictest sense of the term. In its narrow sense, economic production would mean that costs are reduced to the minimum, that the agriculturists have a fair margin of profits and that the costs of agricultural products, food-grains and raw materials as they enter into the costs of living and the prices of manufactured articles either in the internal or external markets are on healthy levels. In the wider senses, economic production would signify the widest distribution of scarce land resources among the various competing ends, forestry, pastures and cultivation in the first instance and secondly, between food crops and cashcrops.

Thus Main objective of the Thesis is to study the trends in prices of foodgrains in India during the planning period, the impact of efforts to stabilise prices on the stability of prices and on the income of farmers producing foodgrains and to draw inferences for policy formulation. In addition to analysing and examining the price trends and policies of foodgrains in India an attempt is also made to critically review the past policies and offer some guidelines for future policy on the basis of the observations and suggest policy reformulations and alternative strategies.

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8. Rajbans Kaur : Agricultural Price Policy in Economic Development, Kalyani, Delhi, 1975.

The study has been conducted in a systematic manner by setting up appropriate hypothesis adopting suitable theoretical framework and employing sophisticated statistical tools and logical methods to analyse various issues in the thesis.

SCOPE OF THE STUDY: The scope of the study is confined only to the plan period, i.e. 1951 onwards. The study is entirely based on the published secondary data. Most of the statistical information was drawn from official reports as well as plan documents and other published works including journals.

In view of the primary importance of food articles, our special attention in this study is devoted to foodgrains. Other agricultural commodities will be touched upon where necessary, especially to highlight the relative position of food articles, but will be excluded from detailed analysis. Cotton and jute are the most important among the crops thus excluded. They are in a special category as speculation is an important variable to be considered in the determination of their prices, and as both of them, especially jute, are greatly subjected to international forces. Including their analysis in this study may, therefore, mean a diversion from our main problem.

LIMITATIONS OF THE STUDY: Some of the limitations of the study should, however, be stated at the outset.

(i) The study does not review the prices of all varieties of agricultural commodities.

(ii) It does not also study the interaction between prices and standards of living in general. It confines itself only to the prices of foodgrains and standards of producers of foodgrains. Further, no attempt is made to study the prices of various categories of goodgrains.

(iii) Although an atttempt is made to study the impact of price stabilisation on the productivity of foodgrain and the standards of living of foodgrains producers, the analysis is incomplete as data on the incomes of foodgrain producers is not available. Indirect methods only had to be adopted.

(iv) The study does not analyse the regional variations in foodgrains production, productivity, and prices.

(v) The study is entirely based on the published secondary data, and as all the limitations of the secondary source might have crept into the study also.

Besides the above, it is necessary for us to be aware of certain other limitations of this study. The first relates to the fact that it is difficult to assess the role of government controls on price mechanism. However, these controls during the period covered here have never been of such nature as to prevent market forces from operating. Formal or strict rationing, except in a few places, had not been in operation and prices have been left free on the whole, for a large part of agricultural produce. Thus this limitation need not be considered as either serious or significant. Secondly, it is difficult to know to what extent monetized sector of the economy expanded during the period and how far this expansion has contained factors affecting the price level. Thirdly, we may say that results of our statistical analysis are to be considered as only rough approximations rather than as precise and highly dependable. With the type of data available at the All-India level, a highly sophisticated analysis may not be practical. The particular difficulties encountered in this respect, are discussed later at relevant places.

RELEVANCE: The low productivity labour force in India has become the growing concern of Indian Government. In fact, realising this trend the Government has declared 1982 as the 'Productivity Year'. The labour productivity, as we know (among other things) is the function of the availability of basic needs like food, shelter, clothing, drinking water, health and sanitation and education. Among these, the food assumes pivotal importance on which health and the capacity to work of a man heavily depends. This thesis attempts to assess the food availability and the matters related to it in India. This is the topic of perennial interest in a populous country like India.

CHARACTERISTICS OF AGRICULTURAL PRICING: Adjustment in Agricultural in consonance with changes in input prices is not relatively easy matter. It is also not possible to adjust agricultural production to changing demand situation particularly unfavourable ones. Further, in agriculture the firm operates more or less at full capacity. Hence the dismissal of the family labour and reduction of most of the overheads which form a larger proportion of total cost is a difficult task. Moreover, agricultural output becomes available at a particular time. At these times the suply is in excess of current demand, while in the lean season the opposite situation tends to prevail. This results in intra-seasonal fluctuation in agricultural prices which is in no way connected to the cost of production.

Agricultural production process in biological in nature, and in turn any norms are difficult to adopt.Though, research institutions and farm management studies suggest a package of studies for obtaining optimum output but the practices actually followed are likely to differ considerably between regions, farms and even products. Norms for the one would be entirely different from those for the other. Even seeds could be local, improved or highyielding variety, requiring highly

different package of practice. Further in agriculture it is not possible to know a particular requirement of material inputs, viz. seeds, irrigation, fertilizer pasticides, etc. Weather Factors is also an important determinant of agricultural output and also affect the degree of use of inputs. For instance, a bad monsoon would tend to inhibit fertilizer consumption. Thus reduce the cost of cultivation. But not necessarily cost of production. On the other hand, a good monsoon would tend to increase the cost of cultivation, but would reduce the cost of production via higher yields.

In a strict sense, in agriculture there is no market for land. Even if we consider the rental value of land, it is determined more by custom and institutional forces rather by the supply and demand conditions. In case of labour, there are distinct operations such as ploughing, sowing, weeding etc. resulting in irregular labour force.Besides, in the agricultural sector large part of the labour cost is on account of family labour. Valuation of family labour poses serious conceptual problems : (a) Operation of family labour at very low marginal productivity level, (b) Equating problems of one hours work done by family labour with casual labour.

Further there are so many vintages of capital in agricultural sector which becomes difficult to put them into homogeneous groups for the purpose of quantification as a variable. Even their evaluation is difficult because of the quantity difference in different forms of capital.

In view of the above characteristics of agriculture, the agricultural prices commission recommends a minimum support-price or a procurement price which is of practical relevance largely in the immediate post-harvest period when prices normnally tend to be low. However, the farmer is free to sell his produce in the market at any higher price

obtainable. The way how the minimum support price acts as minimum or maximum depends upon the prevailing local market conditions, which even differ from commodity to commodity. Further the support prices are generally announced before thr sowing season. But there is an element of uncertainty about the actual cost of production and the yield factor. Hence the impact of these factors can be very much visualised through price fluctuations either annually or seasonally which differ considerably from commodity to commodity.

However, one might also view that the determination of one agricultural commodity price is subject to the inter-commodity price behaviour along with its own supply and demand conditions.

CHAPTER - II

REVIEW OF LITERATURE

C H A P T E R - II

REVIEW OF LITERATURE

The agricultural commodity price behaviour based on the earlier studies can be analysed under three heads : (i) A comparative trends and seasonality of prices of agricultural commdities. (ii) The terms of trade and the parity among agricultural commodities. (iii) An analysis of the price impact on quantity and price expectations.

(1) A COMPARATIVE TREND AND SEASONALITY OF PRICES OF AGRICULTURAL COMMODITIES : It is important to have a knowledge of normal seasonal movement of prices, because, it is useful to farmers and dealers in determining the best time for the sale of the product.

Sinha (1965)[1] studies the seasonal variations in the food prices. The wholesale prices of rice and wheat at Calcutta and Bombay are taken for the study. Along with it, seasonal movement of wholesale prices of raw jute and raw cotton at Calcutta and Bombay respectively are also given for comparison of the seasonal variation of prices of cereals with that of non-cereals. The seasonal behaviour of the prices of rice and wheat in Calcutta and Bombay markets indicates that the lowest prices are recorded in the harvest and post-harvest months and the highest prices in the months towards the end of the harvest months. In case of non-cereals, jute prices follow a seasonal pattern, while in case of cotton the seasonal variation is not marked. This is probably because the marketing conditions in respect of cotton and bargaining strength of cotton growers. In addition the prices of cotton is also influenced by the international stock.

The report on the marketing of rice in India[2] states that the extent of fluctuations in prices from month to month varied from market depending

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1. Sinha S.P., " A study on the seasonal variations in the Food prices following Heavy and Light Harvests in India' " Indian Journal of Agricultural Economics, XX, 1, 1965, pp. 57-60.

2. Report on Marketing of Rice in India, Government of India, New Delhi, 1954, pp. 99-100.

on various factors such as the nature of the crop, the prospects of the next crop and the prices of the other competitive crops. In general, there is a tendency for cheap varieties of grains to show greater fluctuations than the fine ones because according to the well known economic law, fine varieties are demanded by higher income groups whose demand for such varieties is inelastic and hence does not respond as strongly as the supply and price changes.

For examining the index of irregularity around the index of normal seasonal variations in the prices of rice and jute at Calcutta and the wheat and cotton at Bombay, the standard deviations from normal seasonal variation of prices are computed. These show that the deviations from the normal seasonal variations of prices in case of raw jute and raw cotton are greater than those in case of rice and wheat. It means that the seasonal pattern is distributed by other factors. Both jute and cotton being commercial crops, the demand for them is greatly influenced by the national and international position of the commodities in different seasons.

Majumdar (1965)[3] analyses the seasonality in prices. He supports the finding that the producer's share of the consumer rupee is generally low in the marketing period and high in the lean supply period, which is borne out by a study conducted in respect of rice in Andhra Pradesh and Madras for the year 1962.[4]

Kulkarni (1965)[5] examines the price behaviour of food crops recorded in a regulated market. The selected centre is Ghoti in Maharashtra. The

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3. Majumdar N.A. " Some Notes on the price policy implications of State Trading in Foodgrains," Indian Jounal of Agricultural Economics XX, 1, January-march, 1965, pp. 53-56

4. Ministry of Food and Agriculture, Report on Agricultural Price Policy in India, Government of India, New Delhi, 114 and 115, February 1963 (Memo).

5. Kulkarni, A.P., " Prices of paddy in the Regulated Market of Ghoti," Artha Vijnana, 7(1), March 1985, pp. 1-24.

food crop selected is paddy. This study is made possible, by the large amount of data collected in the survey of marketing of three years 1959-60 to 1961-62. He makes a comparison of the behaviour of Ghoti prices and their relationship with the Nasik and Bombay prices. His analysis shows that from 1959-60 through 1961-62, there is a continuous declining trend in all the prices at the three centres. In order to examine the quantitative influence of some of the factors that determine the price of paddy in Ghoti market the following functional relationship is postulated.

$$X_1 = f(X_2, X_3, X_4) = a + b_{12} * 2 + b_{13} * 3 + b_{14} * 4$$

Where,

X_1 = Monthly average price of paddy in there centres in Rs. per md.

X_2 = Total sales of all varieties of paddy in Ghoti market yard expressed as percentage of the yearly total.

X_3 = Monthly average price of paddy in Nasik, Kolapi, in Rs. per md.

X_4 = Trend, 1 for 1959-60, 2 for 1960-61 and 33 for 1961-62.

The period considered is of three years between 1959-60 and 1961-62, because of the peculiar demand conditions present during 1961-62, the regression analysis is run, firstly for the two years, 1959-60 and 1960-61 together and then for all the years together. In order to examine the behaviour of maximim price as well as most common price, both of them are taken alternatively as dependent variables. The regression analysis of monthly prices indicates that the trend in prices in Ghoti, as reflected by the maximum prices, does not show any association with the local supplies and is largely determined by the prices prevailing in Nasik. However, the local supply has significant influence on the price paid for the largest consignment marketed in bulk. If the total arrivals are large, the price paid for it is lower than the one paid when the total arrivals are small.

Kahlon and Singh (1967)[6] analyse the seasonal price movements in groundnut marketing. Four important groundnut markets of Punjab are selected for this purpose. The questionnaire method is used to collect the relevent data from various sources such as the market commities, traders, oil millers and warehouse management. Secondary data or arrivals and prices are obtained from the market committees. The study covers the period 1966-67. The trend in the price of groudnut shows a continous upward movement through the years. To measure the magnitude of seasonal fluctuations, seasonal indices are computed. Twelve month moving averages are used to obtain the trend values. After removing the trend plus the seasonal and the cyclical fluctuations from the original data, whatever remains constitutes the irregular fluctuations. These are irregular in character and hence measured by constructing an index of seasonal price variation (S * I / S).The index of irregular fluctuations is found to be uniform throughout the year.

Singh and George (1971)[7] study the seasonal fluctuations and secular trend for paddy. The trend and seasonal price fluctuations are worked for the major markets in Punjab state. The trend is calculated by using twelve months moving average and the index of seasonal price variation.Analysis of paddy prices during 1957 to 1966-67 shows that there is no visible trend indicating stable market conditions for paddy. However, the pattern of market arrivals indicates a regular upward trend in these markets. But the trend in price is much subdued as compared with the trend of arrivals which is due to the Government's policy of fixing ceiling price on paddy and rice. The analysis shows that because of heavy arrivals of paddy, the price index reveals the

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6. Kahlon, A.S. and Balwinder Singh, "Marketing of Groudnut in Ghoti," Artha Vijnana, 7(1), March 1985, pp. 1-26.

7. Ranjit Singh and George, M.V.,"Marketing of Rice in the Punjab," Giani Printing Press, Ludhiana, February, 1971.

lowest level. On the other hand, when the paddy arrivals are the lowest, the price indices are at their highest in all the markets.

Pavaskar (1971)[8] studies the seasonality in cotton prices. The period under study is 1967-68 to 1969-70. It is observed that though the two years of 1968-69 and 1969-70 show a distinct rise in price from the peak marketing months to the season-end, no such seasonal rise is discernible during 1967-68. In fact, prices decline substantially during that year after the rush of arrivals is over. Evidently a seasonal upward movement in cotton prices after the sale of the crop in assembling markets, is an exceptional regular phenomenon of the cotton market.The risk of subsequent fall in prices is also observed. Nevertheless, it may be conceded that the cotton prices of the past three years seem to have favoured the cotton merchants.

While examining seasonal movements of wheat prices, Venkataramanan and Muralidharan (1978)[9] adopt a non linear seasonal regression model of the form.

$$P_{jt} = P_t = a_o + a_1 J + a_2 J^2 + m_{jt}$$

Where,

P_{jt} - Wholesale price in a market in period j in year t.

P_t - the average wholesale price in market in year t.

m_{jt} - Market arrivals in period j in year t.

J - the number of observations within each year.

The study is made for twelve primary and secondary wheat markets for the period of 1961-1970. For the study of inter-year Seasonality two

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8. Pavaskar, M.G. "Returns to Cotton Merchants concurrent vs Lagged Margins, "Indian Journal of Agricultural Economics, XXVI, 1 January-March, 1971, pp. 35-37.

9. Venkataramanan, L.S. and Muralidharan, "Seasonal Price Movements, Market Arrivals and Returns to storage in wheat Markets," Indian Journal of Agricultural Economics, XXVII, 1, January-March, 1972 pp. 1-14.

separate regression estimates are made, one using monthly and the other bi-weekly price observations within each year. The analysis shows an upward inter-year seasonal regression in all the twelve markets, showing that an owner of inventory would have received a positive gross return over the period 1961-70. It also indicates the upward inter-year seasonal regression in all the twelve markets. The inter-year seasonal regression shows that the year to year variability in the seasonal pattern but confirms the upward seasonal character of price movements in all markets over most years.

Jhala (1984)[10] examines the trend and seasonal fluctuations in groundnut oils and oilseeds. His analysis shows that the wide gap between demand and supply of edible oil seeds contributing to rapid increase in the price of edible oils. The compound growth rate of edible oil price is 8.81 per cent per year over the last 30 years, as compared to the six per cent rise in the general price level during the same period i.e.,1951-52 to 1980-81. In the specific years when oil seeds production declines considerably due to drought conditions the price rise becomes almost explosive. This happened in 1965-66 and 1966-67. Over the past few years the rapid rise in demand due to higher income growth rates also causes prices to escalate. The secular rise in edible oils prices is also characterised by heavy seasonal fluctuations. A time series analysis of monthly groundnut oil prices for a fairly long period clearly reveals trend, cyclical, seasonal and random fluctuations in edible oils prices.The seasonal index of monthly groundnut oil price generally starts with 100 in the month of October when the bulk of groundnut crop is harvested. The bulk of goundnut production is disposed off within three to four months and thus seasonal index moves down to 94 in December. It starts increasing there

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10. Jhala, M.L. "Restructuring Edible Oil and Oil seeds Economy of India, "Economic and Political Weekly, XIX 39, September 29, 1984, pp. 0-111 to 126.

after reaching to 100 in May, then accelerate to 109 in August. In the month of September this index comes down to 104, in the wake of the oncoming harvest. The range of seasonal index of groundnut generally remains higher than that of groundnut oil. What is true for groundnut and groundnut oil is also true for other oilseeds and vegetable oils. Prices of groundnut in the regulated markets of Gujarat and Maharashtra move in unison with prices of groundnut oil at Bombay and as is the case with groundnut prices in markets of Andhra Pradesh and Tamil Nadu with that of Madras groundnut oil prices.

Since groundnut is mainly a Kharif crop, 75 to 80 per cent of the crop arrives in the market in the first four months of the season, i.e. October the farm harvest price, i.e. the price prevailing in the peak season, on the basis of expected groundnut oil price. A positive and very highly significant co-efficient or real groundnut oil price as indicated in the above equation clearly reflects this phenomenon. Obviously it implies that the farm price of groundnut is determined by the expected over all supply/demand of edible oil in the year under consideration. An identical compound growth rate of 8.81 per cent in case of both annual wholesale groundnut oil price at Bombay and all India weighted farm harvest price of groundnut over the last 30 years period further corroborates the hypothesis. Relative groundnut oil price in conjunction with lagged prices of bajra, cotton, etc., explains some 90 per cent of variations in relative farm prices of groundnut which is definitely a very useful and meaningful result.

(2) THE TERMS OF TRADE AND THE PARITY AMONG AGRICULTURAL COMMODITIES :

Kamaladevi and Rajagopalan (1965)[11] examines the parity between the agricultural prices and the general price level and price parity of different farm products with general level of agricultural prices.

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11. Kamala Devi and Rajgopalan R, " Price and Acreage response," India Journal of Agricultural Economics XX, 1, January-March, 1966, pp. 31-36.

Their study relates to the Punjab State and covers the period from 1950-51 to 1962-63. The harvest prices, acreage and production date are obtained from statistical abstract of Punjab 1963. Harvest prices are analysed because these prices have a direct bearing on decisions of farmers as to what to produce and how to produce. Seven crops, viz., wheat, rice, sugarcane, maize, jowar, cotton and bajra are considered for the analysis. Parity between agricultural prices and general price level was worked out by using the formula.

$$\text{Parity Ratio} = \frac{\text{Agricultural Harvest Price Index}}{\text{General Whole-sale Price Index}} \times 100$$

To examine the price structure of individual farm products parity ratios are worked out between individual products and the general agricultural price level with 1949-50 as a base.

$$\text{Parity Ratio} = \frac{\text{Index of Individual Product Price}}{\text{General Index of Agricultural Price}} \times 100$$

Parity ratio of Agricultural price level to general price level shows that, except for the year 1956 and 1957, agricultural prices remained unfavourable to overall price level in the state. This means that the agricultural prices need to be supported in terms of minimum guaranteed price level, otherwise this unfavourable balance would affect agricultural production adversely. The parity relations of individual farm products with general index of agricultural prices in the state indicates that parity remains low for sugarcane, wheat and rice for the period under study. This analysis also highlights wide fluctuations in the price of farm products. Parity prices fluctuate 22 points for sugarcane, 41 points for rice, 49 points for jowar, 50 points for maize and bajra and over 40 points for cotton.

Muthalik-Desai (1966)[12] analyses the sectoral terms of trade in agriculture during the period 1952-53 to 1960-61. He adopts commodity terms of trade of agricultural sector. In the course of this study of terms of trade the groups of manufacturers in the wholesale price index (1952-53 =100) is taken to represent the non-agricultural sector. On the other hand in the agricultural sector, price indices for cereals and food articles are taken. During the period under study, the ratio of prices for different groups of agricultural commodities in relation to those of manufacturers are falling except in case of raw materials to manufacturers, i.e. the price-ratio which is in general favourable for the commercial farmer but not so for the farmer producing cereals. The analysis further shows that the terms of trade moves against agriculture.

While working out the indices of parity of paddy (harvest) price with the prices of competing crops in the Punjab state, Singh and George 13 (1971) show that paddy prices do not have any consistant advantage over the prices of competing crops due to the Government's price policy which arbitrarily fixes the price of paddy and rice, irrespective of price of other commodities. The relatives turn unfavourable to paddy during 1963-64. It is observed that the delay in announcing the price of paddy in late October or in early November causes great uncertainity in the trade. It is, therefore, suggested that the Government should announce its policy well in advance after consultation with producers, traders and experts so that the producers sellers shall not suffer loss by selling their paddy much below the ceiling price.

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12. Muthalik. V.G. Desai, "Terms of Trade andFood Surpluses" Indian Journal of Agricultural Economics, XXI, 1,January-March, 1966, pp. 254-58.

13. Ranjit Singh and M.V. George Marketing of Rice in the Punjab Giani Printing Press, Ludhiana, February,1971.

Diwakar and Sehara (1981)[14] in their paper examine the parity ratios from 1966-67 between the price indices of general articles and of cereal crops, and also of price indices of cereals and those of manufacturers, industrial raw materials. Again, the parity ratios between the price indices of cereals and of inputs like fertilizer, diesel and electricity are estimated.The whole sale price indices (base 1952-53 =100) are used for calculating parity ratios. The result indicates that the parity ratios between the indices of crop prices and of general food articles prices are adverse for all the crops, except for jowar and barley for a few years.

Agarwal and Sharma (1981)[15] workout for the state of Rajasthan the parity for four food crops for the period 1965-66 to 1978-79 with 1970-71 as the base year. The parity ratios are calculated from the indices of farm harvest prices and aggregate index of input prices and also of procurement prices and the aggregate index of input prices. The results of their analysis indicate that after 1974-75 the parity ratios are less than unity and the parity ratios or procurement price show a declining trend since 1970-71. From this they conclude that on parity is found in the prices of inputs and outputs in the state during the period. They therefore, plead for the revision of the present policy. In a way what the authors seem to argue is that the procurement price should be determined only on the basis of input prices and in all years full parity needs to be provided.

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14. Diwakar, G.D. and D.B,.S. Sehara, "Issues in Agricultural Price Determination and Price Policy," Indian Journal of Agricultural Economics, XXXVI, (4), October-December, 1981.

15. Agarwal N.L. and Sharma R.C. " Issues in Agricultural Price Determination are price policy ," Indian Journal of Agricultural Economics, XXXVI, 4, 1981 pp. 122-23.

Diwakar and Sehara (1981)[14] in their paper examine the parity ratios from 1966-67 between the price indices of general articles and of cereal crops, and also of price indices of cereals and those of manufacturers, industrial raw materials. Again, the parity ratios between the price indices of cereals and of inputs like fertilizer, diesel and electricity are estimated.The whole sale price indices (base 1952-53 =100) are used for calculating parity ratios. The result indicates that the parity ratios between the indices of crop prices and of general food articles prices are adverse for all the crops, except for jowar and barley for a few years.

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Humbarwadi et al (1981)[16] in their paper examine the behaviour of parity indices of prices received by the farmers for the output sold, to the price paid by the farmers for buying the consumer goods and needed inputs. They also study the behaviour of inter-crop parity for paddy, rabi, jawar, groundnut and cotton crops in Karnataka. Their analysis indicates that there exists wide disparity between the different crop combinations over the years. In the case for paddy, jowar, rabi and groundnut, the parity indices are unfavourable where as in the case of cotton they are found to be favourable during 1972-1979.

(3) AN ANLYSIS OF THE PRICE IMPACT ON QUANTITY ARRIVALS AND PRICE EXPECTATIONS : One of the most important studies on the aspects by John McNelly (1959)[17] analyses the marketed surplus of rice in India. His analysis shows that the bulk of India's rice production is not marketed. Most of the acreages are small. Rice is a major portion of the cultivator's diet and his family may consume all that he produces or even more. It is estimated by the Ministry of Food and Agriculture that only 31.5 percent of the total rice production moves into commercial channels as marketed surplus. Varitions in marketed surplus do not vary with variations in supply.[18] If production increases and prices fall, the tendency is for the marketed surplus to increase more than proportionately because of a tendency towards de-hoarding. The opposite may occur when production decreases and price rises. At other times, prices may vary quite separately, from domestic production and marketed surplus may become unpredictable.

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16. Humberwadi, et al, "Issues in Agricultural Price-Determination and Price Policy ," Indian Journal of Agricultural Economics, XXXVI (4) October-November, 1981, pp. 122-23.

17. John G. McNelly, " Some problems of price Analysis for Rice" Artha Vijnana, 1(2), June 1954 pp. 127-35.

18. Asoka Mehta and Others, Report of Food Grains Enquiry Committee, Ministry of Food and Agriculture, Government of India, 1957, p. 44

Kulkarni [19] (1963) analyses the relationship between market arrivals and price of roundnut in three regulated markets in Maharashtra. The period of analysis is of ten years between September 1949 and August 1959. This study is made possible by a large amount of data on arrivals and prices available in the records of the market commodities, situated at the centres. The analysis of weekly figures reveals that percent rate of marketing in the "rapid marketing period" has a positive relationship with "Price prospects". So that when the laters are favourable, the produce is marketed at more than usual rapid rate. In the event of favourable price prospects, the percent rate of marketing is increased and the 50 percent and 75 percent points are reached earlier. However, when the price prospects are not encouraging, the rate of marketing is decreased and the reaching of 50 percent and 75 per cent points delayed.

Majumdar [20] (1965) analyses the prices and marketed surplus of rice in Andhra Pradesh and Madras. His analysis shows that the sales by producers are generally very high during the period immediately after the harvest when the producers price is low. As contra-distinguished from this trend, sales by producers decline substantially late in the season when the producers' prices go up. This fact illustrated by the data relating to the quantum of rice marketed during the 12 months of the year 1962 in Andhra Pradesh and Madras. Even the all India pattern shows that there is certain [illegible]hing of the sales during the post-harvest period. This is particularly so in respect of wheat. Prices of wheat reached their lowest level aroumd May-June; about 50 per cent of the total marketed surplus is marketed during the quarter April-June.The pattern regarding marketing of paddy is somewhat less uneven.

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19. Kulkarni A.P.," Marketing of Groundnut in some Regulated markets in Maharashtra" Artha Vijnana, Vol. 5, December 1963, p.357.

20. Mujamdar. N.A. " Some Notes on the Price Policy Implications of State Trading in Foodgrains Indian Journal of Agricultural Economics, XX, 1 January-March, 1965, pp. 55-57.

It shows that the pace of market arrivals may not necessarily follow the normal pattern in the sense of faithfully reflecting the level of production, in a situation when there is expectation of rise in prices. In this context reference may be made to the enquiry conducted by the Agro Economic Research Centres into pace and pattern of market arrivals during the year 1958-59. This reveals, that in the case of wheat, the experience of the farmers of the previous years' high prices and also the relatively lower prices prevailing during the year 1958-59 induce them to withhold stocks from the market in expectation of realising higher prices in later months or to ensure themselves against the risk of having to re-purchase wheat for consumption or seed requirements at higher prices later in the year.

Singh and George (1971)[21] analyse the marketable surplus of paddy in the Punjab State. For the purpose of this study, four markets, two each from the major rice producing areas in the Punjab state are selected. The result shows that the ways in which marketable surplus of paddy is disposed off by farmers, do have some influence on the nature of competition in the market and the prices received by them. Because the whole quantity never brought to the market and exposed to competitive bidding by the buyers. The analysis further shows that there is no significant change in the pattern of market arrivals, the peak period is marked by gluts and the lean period experienced very low quantity of arrivals. It indicates that the practice of holding stocks for sale in the off-season is not pupular among producers in this region. During the years of good harvest producers tend to hold back only a small per centage of their produce, rather they unload most of their surplus, in the market during the short marketing period. Thus, the bulk of paddy produced is sold immediately after harvest, when the price is generally low, and that storage is seldom done at the producers level.

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21. Ranjit Singh and M.V. George, op. cit.

While analysing the Government policies with respect to the movement of 22 commodity and prices, Singh and George (1971) observe that the government policies with respect to the movement of this commodity and prices have considerable impact on the pattern of marketing and price structure. It is observed that the delay in announcing the price of paddy in late October or in early November causes great uncertainty in the trade. It is, therefore, suggested that the government should announce its policy well in advance after consultation with producers, traders and experts, so that the producer-sellers shall not suffer loss by selling their paddy much below the ceiling price.

Nadkarmi[23] has studied the role played by agricultural prices in the process of economic development particularly in determining its stability taking Indian experience since 1951-52 as a case study. He has clarified the nature and impact of imbalance between growth of agriculture and that of the rest of the economy and has evaluated India's agricultural price policy in the light of the implications set out by him.

Krishnaje[24] has focussed on major issues and has not attempted a comprehensive coverage of the vast literature. The conclusions drawn by him have been and continue to be disputed.

SHANKER, K.U. AND ANBOUMOZHI[25] : has made an attempt determining the impact of Government intervention on the price behaviour, particularly food and commercial crops which vary by its commodity

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22. Ibid.

23. Nadkarmi, M.V. " Agricultural Prices and Development with stability," (National Publishing House, Delhi, 1973).

24. Krishnaje, M.V. " Agricultural Price Policy Research in Economics, Second Survey-Monograph-4, ICSSR, New Delhi, 1993.

25. Shanker, K.U. and Anbumozhi, K. "Price Behaviour of Indian Agricultural Commodities, "Discovery Publishing House, New Delhi, 1991.

nature, is a difficult task. In this cotext, the three commodities, viz. paddy, groundnut and cotton are selected in examining the changes in price behaviour in regulated market. The study initiates the discussion on the problem of agricultural pricing and the views on the parity of agricultural prices., While ascertaining the impact of regulation, it is viewed to examine the local price adjustability with terminal price of the selected commodities with the help of distributed lag models. It is the pioneering attempt on ascertaining the inter commodity price determination by adopting principal component analysis. On assessing the plausible causal relations among the prices of the selected commodities, the analysis is made on the trend and seasonal behaviour. The analysis is extended to assess the relationship of arrivals and prices and their determinants in the selected commodities.

AN ASSESSMENT OF THE EXISTING LITERATURE : As is apparent from the preceding detailed discussion on existing literature and its impact on the Indian economy, attempts made so far, suffer discerningly from the following limitations:

1. Most of the studies have a predominant bias of being macro studies. Such studies by their very nature do not touch the core of reality since it is not possible to know from the top what is going on at the inner base of the mountain of the problem. The correct approach necessarily is to dissect the problem into small pieces and then make an intensive effort to assess the reality. However, this is not to suggest that the macro level studies were meaingless. What is intended to highlight is the fact that it is always safe to have several representative micro studies before undertaking a macro level study for making safe generalisations at the national level.

2. Most of the studies are based on secondary data. These studies had thus of necessity to be tailored according to the data available. Therefore, the researchers had to accept rigid framework of the data and could not broaden the spectrum of the quest for reality. These advantages can only be attained and gainfully made use of in micro level studies based on primary data.

3. In the present developmental context in India, rapid changes are taking place on the economic scene which bring in their trial far reaching changes in social, cultural, and political aspects of India.Therefore, even if a number of micro studies were existing initiating of a new study in this area would have undiluted importance as such an attempt is bound to throw up several new facts in any empirical exercise having a bearing on policy issues. Thus, on its own, the necessity of a new micro study remains ever green.

It has revealed that no systematic and rational approach has so far been made on the proposed subject. Therefore, this study attempts to find answers to the questions and limitations of the earlier studies, as empirical study aims to adopt socio-economic factors focussing only on economic factors. The present study on "FOOD GRAINS PRICE STRATEGY IN INDIAN PLANNING" attempts to assure not only a reasonable income to the farmers but also adequate supply of food to the consumers at reasonable prices. It is a pioneering effort to study the food production trends, prices and policies of the government during India's planning era.The review of Public Distribution System, recent Economic Reforms, New Economic Policy - 'Implications for Indian Agriculture and Agricultural Policy of India in the wake of GATT (URUGUAY ROUND) with the object to assess their impact on farm production and distribution of food grains in the economy, has been made. Besides, the relevance

and the usefulness of the price theory in determining the food grains prices and fluctuations in the prices of food grains has been highlighted. A dynamic food grains policy for the coming years which should provide guidelines to the economic planners, policy makers and academics has been suggested. The study would prove immensely useful to researchers, teachers, students and the government in our Country.

CHAPTER - III

OVERVIEW OF FOODGRAINS PRODUCTION PRICES AND POLICIES DURING PLANNING ERA

C H A P T E R - III

OVERVIEW OF FOODGRAINS PRODUCTIONS PRICES AND POLICIES DURING PLANNING ERA

The combination and transformation of resources of inputs results into the production of food. Here we have two factors : (i) Resources as independent factors and (ii) food as the dependent factor.The relationship between the physical resources and food as an output is called production function. Hence, when we talk about food policy in a broader sense, we have to consider resource situation, food production and prices together.

FOOD PRODUCTION AND ITS SUPPLY : Questions of the total food production and its supply are of concern to all individuals whether or not they are producers of food.Supply functions, of course, are of particular interest to policy-makers who have to administer the food policies and programmes. The explanation of the nation's food supply policy is to be explained in the production function of agriculture, the structure of input and food prices and the price response of individual farmers.

The food products which cultivators produce at a particular time is not the function of price at that time but of earlier decisions. The food supply of any one year is affected by weather conditions prevailing in different parts of the country. Some regions suffer from drought or flood and others have favourable weather conditions : famines and scarcity in India during the nineteenth century were mostly due to the lack of transport facilities in moving food from the good harvest area to the scarcity region.

Because of the lack of any significant pressure of population on land, there was a static equilibrium between demand and supply of foodgrains. In fact, the country had some marginal surplus for export. In this

connection, the Census of India Report, 1951 presents the following picture : About 1880 the country was surplus in foodgrains to the order of 1.2 million tons. Even in the famine years 1896-97 and 1899-1900, the country exported 1.5 milion tons and 2.2 million tons of foodgrains respectively.

Megasthenes observed that "Famines has never visited India and there has never been a general scarcity in the supply of nourishing food."[1] Kautilya's Arthashastra enumerates various remedial measures to tackle food scarcity at the time of crisis.The first famine occurred in 1343 during the reign of Mohammed Tughlak, followed by one each during the rule of Akbar,Shah Jahan and Aurangazeb. India suffered twelve famines and four severe food scarcities, during the period of East India Company. More than a third of the population of Bengal perished in the famine of 1770. After the war of Independence in 1857, there were ten severe famines besides a large number of mild ones. In the nineteenth century alone, when India had a large surplus of foodgrains, there were as many as thirty-one famines and between 1873 and 1900, nearly 24 million died of famines.[2]

HISTORICAL PERSPECTIVE: Agricultural methods and practices in India have a long history and have been evidentort of the experience of ages. They have well stood the test of time. The technological advances in the field of agriculture is only a recent phenomenon and majority of farmers yet dependent themselves fully as has been done by some Western Countries and Japan in the East.

The Government took little interest in the problems of agriculture before the mid-seventies of the 19th Century. It was the great Bengal

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1. Bansil, P.C., Agricultural Problems of India, (New Delhi Vikas, 1877), p. 73.

2. Ibid., p. 74.

and Assam Famine of 1866 and the experience of organising relief that forced the attention of the Government to the need for the development of agriculture.The first proposal to constitute a Special Department of Agriculture at the Centre was put forward by the Commission appointed in 1866, following the severe famine of that year but was turned down as premature. It was only in 1871 that the Department of Revenue, Agriculture and Commerce was created. It was then recognised that Provincial Department of Agriculture must form an essential part of any scheme of agricultural development. The Department had a brief existence of about seven years and was merged in the Home Department in 1879 on account of financial stringency. Its only achievement was to evolve a system for collection of agricultural statistics and other data.

Very useful suggestions were made by the successive Famine and Irrigation Commission for the development of agriculture. But, as observed by the Royal Commission on Agriculture. "The Government took no immediate action and the next ten years were spent mainly in Conferences." A separate Department of Revenue and Agriculture was revived in 1881. It was realised that without provincial departments, no tangible results can be achieved. Hence the new Department was asked to take up the question of the roles to be given to provincial Department. Provincial Departments were established in many states between 1875-1905. They were mostly involved in collection of statistical and economic data. However, they could not make much progress in the absence of sound policy and an efficient organisation. It was also realised that without technical advice, no advance was possible. Dr. J.A. VOELCKAER, distinguished agricultural chemist was brought over to India in 1889 to conduct an enquiry into the character of the soils and agricultural conditions. This can be considered to be the first serious step to frame a policy of agricultural research

suited to the conditions of India.[3] This was followed by the appointment in 1891 of an Inspector-General of Agriculture with advisory functions. An imperial mycologist and an entomologist were added to the Department in 1901-03.

The report of the Famine Commission of 1901 inaugurated the next significant stage in the growth of agricultural departments.[4] The Commission recommended the strengthening of the scientific state of agricultural developments and legislation to set up mutual societies. Lord Curzon got the agricultural departments thoroughly reorganised and there was an expansion of the scientific staff of the Departments and of their activities. With the establilshment of Agricultural Research Institute at Pusa and bring together with it the scientific staff of the department under a single roof, organised agricultural research may be said to have begun in India. Directors of Agriculture were appointed in all the Provinces. Agricultural divisions and circles were marked out and duties earmarked for the subordinate staff. Agricultural colleges were reorganised and research stations and experimental farms were also set up. The Imperial Agricultural Service was constituted in 1906. The years from 1905 to 1914 were years of steady growth in agricultural research, education and other related services.

Agriculture became a transferred subject in 1919. Under the new arrangements, the Central Government was to look after the Central agencies of agriculture and institutions for research, since the provincial governments could not make much headway since the resources at their disposal were limited. Some irrigation works were completed during this period.

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3. Ibid. p. 56

4. Ibid. p. 56

A Royal Commission on Agriculture was appointed in 1926. It was required to examine and report on the prevailing conditions of agriculture and to suggest measures to promote agriculture. They were also asked to look into the methods by which agricultural operations were financed and credit was flown into agricultural sector. The idea was to make agriculture a profitable industry rather than a mode of living and bring about alround efficiency in the field of agriculture. One of the basic recommendations of the commission was to change the outlook of the cultivator himself so that he may take an active interest in bringing about improvememts. It suggested that rural problem should be tackled as a whole in its various aspects. Simultaneously it assigned and charged the Government with specific responsibility for bringing about an alround improvement in rural life.

Under 1935 Reforms, the sphere of central government's responsibilities was further restricted. It was to look after only those subjects which have all-India relevance. Sir Jhon Russel visited India during 1936 to review the working of the Imperial Council of Agriculture Research. He emphasised the need for further use of existing knowledge rather than accumulation of more knowledge. He felt that knowledge gained in the laboratory should be applied to cultivation in fields. He wanted the Council to take up the responsibility of putting the result of research into practice.

Inspite of considerable expansion in the staff and activities of agricultural departments till 1937, research and education facilities were inadequate. Agricultural education was not very affective and village community spirit was considerable weakened under British Rule. A powerful claim of vested interests in the form of money lenders and landlords had been created and the farming community groaned under the exploitative economic system. Agriculture could hardly prosper under such a situation.

The Years that followed were those of upheaval in the Indian History. With the sepration of Burma in 1937, India lost its rice bowl creating food shortage to the turn of 20 lakh tonnes. It was only after the creation of Food Department at the Centre in 1942 that the problem of food shortage engaged the attention of the Government to act, but no attempt was made to re-organise the Indian agriculture by means of coordinated over-all developmental planning. The long-term policy hinged around the recommendation of Krishnamachari Committee.

'Grow More Food' Campaign initiated in 1943 by the then Indian Government, as a long term policy, could not produce the expected results as it was not supplemented by a comprehensive and integrated plan for over-all agricultural development and re-organisation. Food controls, as a short-time remedy, introduced by the Briish regime, extended only upto 145 million people by the time India gained Independence. In 1947, the partition of the contry deprived it of surplus wheat producing areas which went to Pakistan. The World War II, the partition and the alarming rise in population were the three dominant factors which had contributed then to the aggravation of food problem.

EMERGENCE OF FOOD PLANNING : It was in 1942, the Government of India fully realised the gravity of food situation in India. A Food Department was created in December, 1942 to deal with control of food prices, supply and distribution of foodstuffs and coordinate civil and military purchases as well as procurement of foodgrains. In 1943, the Government of India appointed a Foodgrains Policy Committee whose main recommendation to intiate Grow More Food Compaign was accepted by Government. The State government conducted in its execution by subsidy and grants on fifty-fifty basis.

The campaign was unsuccessful and the Government appointed another Food Grain Policy Committee in 1947 to review the whole question and suggest a suitable policy. The year 1947 faced an acute food situation because of the partition of the country when the rich food surplus areas went over to Pakistan. In July, 1949 the Government of India appointed Food Production Commissioner to implement the new food policy and he was assisted by an expert Food Production Board and the States were also required to create a similar machinary. The policy was to undertake Food Self-Sufficiency Drive to grow more cereals in the country.

Since the Government had to import foodgrains on a large scale in 1951 and there was inflationary pressure, the first Five Year Plan accorded highest priority to agriculture, including irrigation and power projects. As against a target of 61.5 million tonnes during the plan period, the food production reached a leavel of 65.8 million tonnes. But the Government had to import about 3 m.tonnes annually during the plan period to meet the demand of increasing population. The import of foodgrains had to be continued during the subsequent plan periods inspite of the increase in aggregate food production to augment the supply to feed the nation.

On the basis of evidence available now, the turning point from a surplus to a deficit in food production in the Indian sub-continent can be safely placed around the middle of the eighties of the last century. The earlier policy of non-intervention by the government even in the face of evidence of acute distress caused by the steep rise of prices of foodgrains is most unfortunate. It was realised that an active food policy should take care of the strong probability of steep rise in food prices in a year of widespread drought and the Government should adopt to meet the threat of famine whenever it occurs. The Indian Government after independence has become more convinced of the rural

India. So much so, since 1947, the Government has been putting conscious efforts to make the country a surplus one in the sphere of food production. In the initial years of independence, the Government of India, on the advice of Mahatam Gandhi, pursued a policy of gradual de-control which was supplemented by re-oriented 'Grow More Food' campaign and the Food Self-Sufficiency drive.[5] But such hasty action of de-control was proved to be unwise, resulting in steep rise in food prices, and forced the government to intoduce the price control again. The whole problem, however was attacked at its very root during Five Yrae Plans which aimed at reorganising and revitalising Indian Agriculture.

The Grow More Food campaign was re-oriented and integrated with the Community Development cum-Agricultural Programme of the First Five Year Plan. The re-oriented Grow More Food campaign was shaped on the basis of the recommedations made by the Second Foodgrains Policy Committee of 1947 (popularly known as Thakurdas Committee). The re-oriented Grow More Food campaign placed much reliance on the methods of intensive cultivation and took effective steps for fixation of definite targets from year to year for additional food production in each State. Prior to the launching of the First Five-Year Plan, there was also a food self-suficiency drive which was initiated by Sri K.M.Munshi, the then Agriculture Minister.

ENUNCIATION OF THE AGRICULTURAL PRICE POLICY : During the last four decades, India's agricultural price policy has moved through two distinct phases. Up to 1965. Government was following an "ad-hoc" type policy, marked by spells of hectic activity in years of poor crops and complete complacency in the years of good crops. In 1965, however, the Agricultural Prices Commission was appointed and, therefore, subsequent

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5. India, Manager of publication. Report of the Grow More Food Enquiry Committee, (Delhi, GO, 1982).

period has witnessed the beginning of a more stable and meaningful price policy.

Prior to the beginning of First Five Year Plan, two committees were appointed by the Government of India who in their recommendations hinted towards the desired price policy. In 1947, Foodgrains Policy Committee was formed which recommended a policy of progressive decontrol, reduction of dependence on imports of foodgrains and substantial increase in domestic production within the earliest possible time. Another committee, known as Foodgrains Procurement Committee (1950) recommended the continuation and extension of the system of rating in the country.

BASIS OF PRICE POLICY : In chalking out an agriculture price policy, the following points must be taken into consideration

1. Central price level.
2. Agricultural prices in relation to the general price level.
3. Level of production of major agricultural commodities per unit area.
4. Cost of production per quintal of major agricultural products.
5. Relative prices of agricultural commodities.

PARITY PRICE : There is a certain section of the farm leadership which demands that agricultural prices should be fixed on parity price. A parity price is the price that makes it possible for the seller of a unit of article to buy as much other things and services as he used to purchase with a unit of the same article in a given base period. It is calculated by multiplying the price of the article at the base period by an index of the price of the articles bought divided by the price index at base year. For example, take the base year is 1981-82. Suppose the average price of wheat was Rs.180 per qt, in this period and the index of the price paid by the cultivators was 200. If the price index

rose to 230, the parity price for wheat would be calculated at Rs. $\frac{230 * 180}{200}$ = Rs. 207 per qt. Parity prices for other levels of index would be computed in the same way. But this formula of parity prices is not suitable under Indian conditions, because the aim is to maximise production. It is the attempt to keep down differences in costs and prices. This is aimed at a condition in the U.S.A., Where the principal purpose of parity prices is justice and to keep the farmers on the farm.

INSTRUMENTS OF PRICE POLICY : The chief insturments of policy have been (1) statutory and non-statutory rationing for distrubution; (2) Procurement and imports; (3) restrictions on private traders in the form of licensing etc., and selective credit controls on bank advances to traders; (4) restrictions on the movement of foodgrains; and (5) minimum support prices. It can be noted at the outset that though committee after committee has emphasized the importance of building adequate buffer stocks and of reducing fluctuations in prices through buffer-stock operations, no adequate steps have been taken in this direction. The policy, at least till recently, has been to deal with a situation on an adhoc basis as and when it arises, rather than to evolve a long-term machinery. The attitude, in other words, was to treat the food problem as a crisis of a temporary difficulty rather than as a chronic problem. As such no permanent and stable machinery was evolved either for buffer stock operations or for procurement and subsidised distribution of grains to consumers.

FOODGRAINS POLICY UNDER FIVE YEAR PLANS :

(i) FIRST FIVE YEAR PLAN (1951-52 TO 1955-56) : During 1951, India faced a food deficit of 2 million tonnes. The First Five Year Plan therefore did its level best for achieving self-suffeciency in food supplies. With the marked emphasis on agricultural reorgaisation and

improvement the plan alloted Rs. 357 crores for agricultural and community development. The target of additional production of foodgrains during the First Plan period was put at 7.6 million tonnes so that the country might be self-sufficient at a per capita consumption of 14 ounces per day. Planned agricultural re-organisation assisted by favourable climatic factors made it possible to increase food production by 11 million tonns, from 54 to 65 million tonnes during the First Plan period. Agricultural production increased by about 17 percent. As result of this, near self-sufficincy conditions prevailed on the food front, and food rationing and control virtually disappeared during the last phase of the First Plan. Food imports came down from 4.7 million tonnes in 1951 to only 0.7 million tonnes in 1965. The monsoon had become irregular for a few years. Food imports again make their appearance. Food prices shot up.

(ii) SECOND FIVE YEAR PLAN (1956-57 TO 1960-61) : Inspired by the First Plan's brilliant result on the food front, the Second Plan, though much bolder than the First in regard to volume of development expenditure, initially chalked out a modest target for food production. A target of 10 million tonnes of additional production of foodgrains was originally fixed for the Second Plan period by the Planning Commission as compared to 7.6 million tonnes in the First Plan. The target was, however, raised at a meeting of the National Development Council held in May 1956 to 15.5 million tonnes. Although the Second Plan was confronted with a food crisis during the initial years, the foodgrains output increased during the Plan period by about 12 million tonnes. Basically, however, the Second Plan gave more importance to industrialisation than to agricultural development. As a result of this, the Second Plan outlay for agricultural production programmes was only Rs. 276 crores though the Total Plan outlay was Rs. 4600 crores.

Despite the impressive growth in foodgrains production during Second Plan, the food situation in the country began to take rather rapid turn for the worse after October 1955. Speculative elements took advantage of the situation of scarcity of foodgrains. Grappling the situation, the Government with the help of the Reserve Bank of India, in fact, introduced from the middle of 1956 a policy of credit squeeze which mainly emphasised selective credit controls to control the agricultural prices. Inspite of this credit squeeze, there was no substantial fall in the prices of foodgrains, specially of rice and paddy.

The Government introduced the system of licensing policy for bringing under control the larger grain merchants in selected localities and establishing fair price shops for the distribution of foodgrains in scarcity areas. The Government also appointed the Foodgrains Enquiry Committee in 1957[6] under the Chairmanship of Sri Ashok Mehta, to review the food situation and to make necessary recommendations. The report provided useful data and probed deep into the factors which have contributed to the rise in foodgrains prices since launching of the Second Five Year Plan.

In its report, the Mehta Committee stated that the rise in foodgrains prices since the middle of 1955 may be ascribed to a general increase in demand resuilting from the increase in investment expenditure on public and private sectors financed by deficit financing and credit expansion during the last few years. These general inflationary forces tended to manifest themselves through various factors on the demand side of foodgrains. With a steady increase in the purchasing power of the public, there has been change both in the volume and pattern of good consumption of many sections of the people. Another factor, according to the Committee, which affected the demand side was the

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6. India, Manager of Publication, Report of the Foodgrains Enquiry Committee (New Delhi, GOL, 1959).

change in "propensity to stock". In 1956-57, most of the stock piling was done by the traders but in 1956-57 there was a significant change and a large part of the stockholding was also done by the big and medium producers.

While reviewing the suply position of foodgrains, the Committee stated that the fall in the production of millets to the extent of 3 million tonnes in 1955-56 initiated the upward trend in prices since 1955, and increased the pressure of demand on both rice and wheat. Unfavourable weather condition and irregular monsoons acted as aggravating factors. The Committee further observed that it was always the shortfall in production and later the slowing down in market arrivals which pushed the prices of foodgrains sharply upwards. On the basis of its observations, the following recommendations were made by the Mehta Committee.

1. Seting up of Foodgrains Stabilisation Organisation'- This will be a large trading body whose main function would be to counteract the fluctuations n foodgrains prices by undertaking buffer stock operations, essentially to maintain supply-demand equilibrium and ensure price stability.

2. Setting up of another high-powered authority to be known as the 'Price Stabilisation Board' for the formulation of policy for price stabilisation in general and to chalk out various programmes and schemes to enforce those policies. It was felt by the Committee that in an economy like India, free trade is certainly motivated by the desire of the private traders to secure maximum profit, and when foodgrains supply becomes marginal, it is natural that a stabilisation organisation would be necessary for neutralising the elements of speculation on foodgrains by private merchants.

3. The Committee recommended setting up of a body of non-officials called the 'Central Food Advisory Council', to assist the Food Ministry and Price Stabilisation Board.

4. The Committee further Recommended for an organisation called "Price Intelligence Division" for collecting all relevant data regarding agriculture and agricultural price. The Price Stabilisation Board, the Central Food Advisory Council and the Price Intelligence Division will keep a close watch over the price situation and recommended necessary action from time to time.

5. The Committee also recommended for maintaining adequate reserve sock as distinguished from any buffer stock. In this context, the Committee felt than an annual import of 2 to 3 million tonnes of foodgrains will be required during the future years.

(iii) THIRD FIVE YEAR PLAN (1961-62 TO 1965-66) : Contrary to the expectations, foodgrains production as a whole showed no increase during 1961-62 remaining at the level (81 million tonnes) of the last year of the Second Plan. Even during 1962-63 and 1963-64, the production level remained stagnant around 80 million tonnes. The position substantially improved during the next year (88 million tonnes) but again deteriorated appreciably to 72 million tonnes during last year of the plan (1965-66). There was a slight increase (74.2 million tonnes) during the following year (1966-67).

During the Third Plan period about Rs. 1089 crores were spent for agriculture and allied scheme like large land small irrigation schemes, soil conservation, land evaluation of the third plan in the sphere of agricultural production indicates that the performance was rather disappointing. As against the expected average annual rate growth of 6 percent, the actual average growth rate of agricultural production was

only about 2 percent annum. The index agricultural production in the last year of the Third Plan was lower than of the last year of the Second Plan.

The situation of food shortage leading to a steep rise in foodgrains prices arose mainly due to the growth in demand resulting from increased investment outlay of the Second and Third Plans, the relatively inadequate rise in domestic production of foodgrains due to unfavourable weather conditions, and the tendency to hoard stocks by the producers as well as the traders in a quasi-free market mechanism. Added to this, the unfavourable political fctors like Sino-Indian conflict (1962) and Indo-Pakistan hostilities (1965) have also contributed for the failure of Third Plan in respect of agriculture. Wide gaps between ther targets and the achievements in several sectors, particularly in agriculture may be discerned at the end of the Plan period.

(iv) THREE ANNUAL PLANS (1966-67,1967-68 AND 1968-69) : There were three years gap between Third and the Fourth Five-year Plan. During this interim period, the country had three annual plans. The total outlay for the 1968-69 and Rs. 2,337 crores as against Rs.2,246 crores in 1967-68 and Rs. 2,082 in 1966-67. The postponement of the Five Year Plans, virtually amounted to postponement of investment and a slack in the economic activity. Investments during 1966-67 and 1967-68 were running at rates lower than in the closing years of the Third Plan and this is one of the reasons which might have contributed to the recession in the economy and a slide-back from the growth path. During the first annual plan (1966-67) due to drought and scanty rainfall, the foodgrains output increased only marginally and stood at 74 million tonnes. However, the production shot up to 95 million tonnes in the next year (1967-68). This was again due to very good weather

conditions. The foodgrains production was 95 million tonnes during the period of last annual action plan (1968-69).

One of the features of these annual plans was that a new strategy for Agricultural Development was put into action from 1966-67. The new strategy stressed the increasing use of science and technology for raising agricultural production. The principal Ingredients of this new strategy are as follows : (1) Cultivation of new high-yielding varieties of seed; (2) Development of multiple cropping, i.e., bringing additional area under crop production in the irrigated and assured rainfall area; (3) Development of irrigation for intensive cultivation; (4) Soil and water management measures; (5) Introduction of a package of practices including using of high-yielding seeds, optimum quantities of fertilisers and pest control measures; (6) Emphasis on research and its application; (7) Farmers' training and education; and (8) Development of the infrastructure of credit, marketing, distribution system for supply of imports, etc. Due to the application of science and techonology the country experienced a sudden rise in agricultural production, which is termed as Green Revolution in the field of agriculture.

But there is a controversy regarding whether India has experienced Green Revolution in the real sense. For, one has got to remember that after a remarkable increase (7.3 percent) in 1970-71, agricultural production declined by 1.6 percent in 1971-72 and then sharply fell during 1972-73. Again after an excellent increase (11.2 percent) in 1975-76, agricultural production declined by 5.1 percent in 1976-77. Once again there was a spectacular increase of nearly 12 percent in the following year (1977-78). These erratic behaviour in the production level apart, even the so called break-through in foodgrains production appeared to be confined only to wheat, jowar and bajra. Rice was not

much affected. In other words, the green revolution turned out to be a wheat revolution ans not an alround green revolution. However, with the green revolution or wheat revolution and with the consequent increase in agricultural income, the gap between rich and poor in the Farming sector also has increased. The benefits of the sudden increase in agricultural production has not trickled down to the marginal and subsistence farmers and agricultural labourers. This is because of the prevailing institutional rigidities, wrong and defective choice of technology in the farming sector. (The thesis does not propose to deal with this aspect of the problem in detail, as it has no direct hearing on the central theme of the thesis).

(v) FOURTH FIVE YEAR PLAN (1968-69 TO 1973-74) : The Fourth Plan placed a good deal of reliance on the so-called new strategy for increasing the production of foodgrains. The new strategy centered around intensive cultivation of 32.5 million acres of land in areas where there is assured rainfall, good irrigation system, immunity from natural hazards such as floods, famines etc.And development institutional facilities for credit, storage and marketing. Out of an increase of 31 million tonnes of foodgrains projected for the Plan, 21 million tonnes were expected to come from this programme. The new strategy was expected to obtain the maximum return from land, water and other inputs through electing the most promising areas over the entire country and concentrating the application of the inputs in these areas.

Further the Fourth Plan laid considerable emphasis on streamlining the arrangments for providing effective support as a means of facilitating the adoption of modern technology and increasing agricultural production. In fact, the assurance of incentive prices to the producers has been an essential ingredient of the new strategy of agricultural development adopted since 1967-67. In the case of foodgrains, the price

policy adopted comprises fixation of minimum support prices for all important cereals. Although minimum support prices have been announced for kharief cereals during the first five years of the Fourth Plan, support to the market has been provided at the level of procurement prices which are generally higher than the minimum prices and include considerable incentives for the producers of foodgrains. This policy of providing support at procurement prices has aided the adoption of new technology particularly in the case of wheat which has brought about a substantial increase in foodgrains productions. Production of wheat has almost doubled since the adoption of new strategy; its procurement has also shown considerable increase having reached 5.1 million tonnes in 1971-72 and 1972-73 marketing seasons as compared to negligible quantity procured before 1967-68. In the case of rice, even though some increase has taken place in production, there lives no real breakthrough. Among coarse grains, bajra has recorded better performance, but the overall production of coarse of cereals was fluctuating considerable from year to year on account of weather. The minimum support prices and procurement prices were not fixed for pulses during the Fourth Plan Period. However, despite high market prices production of pulses has remained by and large sdagnant or even declined. To maintain the minimum calorific nutritional standards of the people, the use of pulses becomes very important. But, in this respect, the country has not achieved significant results.

The Government started maintaining a large network of ration or fair price shops for supply of foodgrains to the vulnerable sections of the population at reasonable prices. Issue price were accordingly fixed for this purpose. Government had also undertaken to build up a buffer stock of 5 million tonnes in foodgrains during the Fourth Plan, with a view to minimise the fluctuations in availability over the years and to ensure stability of prices. Along with the policy of buffer stock, the

Government took over wholesale trade in wheat in 1973 with the primary objective of providing fair prices both to the producer and the consumer.

In 1969-70, the country produced 100 million tonnes of foodgrains. During the year 1970-71 the production of foodgrains increased to 108.4 million tonnes. There was decline in foodgrains production in four subsequent years on account of erratic behaviour of monsoon. The foodgrains production came down to 105.2 million tonnes in 1971-72 (1.6 percent) and further fall sharply by 8 million tonnes, i.e.,to 97.2 million tonnes during 1972-73. This has resulted in sharp rise in foodgrains prices and aggravation of the inflationary trends. However, it may be noted that overall agricultural prodution kept in line with the Fourth Plan projections in the first two years of the Plan. The Fourth Plan envisaged 5 percent annual growth rate for agricultural sector. Against this, the growth rate of agriculture sector was 5.1 percent during 1969-70 and as high as 7.3 percent in 1970-71. At the end of the Fourth Plan period (1973-74), the total foodgrains production stood at 104.6 million tonnes which was almost equal to the level of 1971-72. On the whole, the Fourth Plan witnessed an average growth rate of about 3 percent per annum in the agricultural sector.

(vi) FIFTH FIVE YEAR PLAN (1973-74 TO 1978-79) : The main objectives of food policy in the Fifth plan were, (1) to ensure that the consumer prices are stabilised and in particular that the interest of low-income consumers are safeguarded; (2) to ensure that the producers get reasonable prices and continue to have adequate incentives for increasing production; (3) to build up an adequate buffer stock of foodgrains with a view to ensuring both the objectives mentioned above by selling from the buffer stock to meet the shortages and high prices of buying for the buffer stock to support falling prices.[7]

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7. India, Planning Commission, Sixth Five Year Plan 1980-85, New Delhi, GOI, 1981), pp. 97-146.

The overall growth rate of the economy was only 3.6 per cent per annum during the four year period of the Fifth plan. In 1974-75, foodgrains production fell to 99.8 million tonnes. The year 1975-76 was a good year and the target of 121 million tonnes foodgrains was achieved. However, erratic monsoon again brought down the foodgrains production in 1976-77 to 111.6 million tonnes compared to the previous year. An all-time record production of 125.5 million tonnes foodgrains (including an all-time record production of 50 million tonnes of rice) was attained in the last year of the Fifth Plan (1977-78) thereby exceeding the plan target for foodgrains production which was fixed at 125 milion tonnes. The Fifth Plan had fixed a target of 140 million tonnes for the last year of the plan. Had the target been fulfilled, we could have had a surplus of 14.3 million tonnes of foodgrains in the last year of the Plan. However, the actual foodgrains output fell short of 8 million tonnes and stood at 132 million tonnes during 1978-79.

(VII) SIXTH FIVE YEAR PLAN (1974-75 TO 1984-85) : Initially the plan period was fixed as 1978-79. But a change in the Government at the centre in 1980, affected a change in the plan period also. The new Government rescheduled plan period to 1980-85. The new Sixth Plan envisages growth rate of 5.2 per cent annum during the plan period. Of the total Plan outlay of Rs. 97,500 crores for the public sector (at 1979-80 prices), 24,699 crores (25.3 per cent) has been envisaged for agriculture and allied sector, irrigation and rural development. The foodgrains production is expected to increase from 127.86 in 1979-80 to 153.60 million tonnes in 1984-85, registering a growth rate of 3.9 per cent annum. It was proposed to bring additional 10 million hectares under the cropped area, 159.6 million hectares under HYV programme, and 13.60 million hectares under irrigation. Gross production increased to 132 million tonnes in 1978-79 against 126.4 million tonnes in the previous year. Though the harvest fell by as much as 17 per cent in

1979-80, it was more than made good in the next year as the output reached the 130 million tonnes level during 1980-81 as against the target of 133 million tonnes.

(viii) SEVENTH FIVE YEAR PLAN (1985-86 TO 1989-90) : The targets of foodgrains production envisaged for the Seventh Plan are given in Table 3.1

TABLE 3.1

TARGET OF CROP PRODUCTION - SEVENTH PLAN

Crop	Unit	1984-85 Assumed Base Level	Seventh Plan Target (1985-90)	Compound Grow Rate-column 4 over column 3 (% per annum)
1	2	3	4	5
(i) Foodgrains				
(a) Rice	Million tonnes	60.00	73.00-75.00	4.00-4.56
(b) Wheat	" "	45.00	56.00-57.00	4.47-4.84
(c) Coarse Cereals	"	32.00	34.00-35.00	1.22-1.81
(d) Pulses	"	13.00	15.00-16.00	2.90-4.25
TOTAL FOODGRAINS	"	150.00	178.00-183.00	3.48-4.06

RICE : For increasing rice production and productivity, steps will be taken for diversification of varieties, higher seed replacement, intensification of community nurseries programme and development of technology suitable for problem areas like deep water, drought/flood prone areas, pest-infested areas and saline and alkaline areas. Emphasis will be placed on the use of low cost and non-monetary inputs like timely sowing, line-sowing, optimuim plan population, efficient water management and weed control measures.

TABLE 3.2

AREA-WISE (IRRIGATED AND UNIRRIGATED) BREAK UP OF ALL-INDIA PLAN TARGET OF FOODGRAINS PRODUCTION

Crop	Type of Area	Area (Million hectares)	Yield (Kg/ (hectare)	Production (Million tonnes)
1	2	3	4	5
(i) Rice	Irrigated	21.5	2237	48.10
	Unirrigated	22.5	1151	25.90
	Total	44.0	1682	74.00
(ii) Wheat	Irrigated	22.9	2210	50.60
	Unirrigated	5.1	1059	5.40
	Total	28.0	2000	56.00
(iii)Coarse Cereals	Irrigated	4.6	1478	6.80
	Unirrigated	35.5	766	27.20
	Total	40.1	848	34.00
(iv) Pulses	Irrigated	2.3	1130	2.60
	Unirrigated	23.4	573	13.40
	Total	25.7	623	16.00
TOTAL Foodgrains	Irrigated	51.3	2107	108.10
	Unirrigated	86.5	831	71.90
	Total	137.8	1306	180.00

In order to overcome the existing constraints and accelerate the growth of production and productivity of rice in these areas, a pilot project was initiated in 1984-85 in 51 selected blocks in the eastern region, as a Central Sector project. A sum of Rs. 10 lakhs per block was sanctioned to the participating states for the implementation of the project. On the basis of the experience gained in implementing the pilot project, a special rice production programme is being launched during the Seventh Plan period as a Centrally Sponsored Scheme in 20 per cent of the blocks iln the eastern region. The project will aim at identifying constraints in the way of rice production at the block level and undertake planning and implementation of suitable location-specific programmes. It will consist of several sub projects having different components based on actual area needs. The emphasis of the

project will be on the removal of basic physical and infrastructural constraints through development programmes such as exploitation of ground water and development of irrigation and drainage facilities. Stress will also be laid on strengthening institutional frame work through improvement in land tenure, water use efficiency, credit, marketing, storage and post-harvest handling, timely delivery of inputs and services as well as research for evolving new varieties and appropriate technolgies so as to make a tangible impact on rice production and productivity.

PULSES : Growth in the production and improvement in the productivity of pulses have not been quite satisfactory largely due to factors like high risk and low profitability, small proportion of irrigated area, inadequate use of modern inputs and gaps in technology and extension. The major elements of the strategy envisaged for achieving the Seventh Plan target of pulses production are the following:

(1) Introduction of pulses in irrigated farming systems; (2) bringing additional area under short-duration varieties of moong and urad in rice fallows in the rabi season and as a summer crop where irrigation facilities are available; (3) inter-cropping of arhar, moong and urad with other crops; (4) multiplication and use of improved seeds; (5) adoption of plant protection measures; (6) use of fertilizers and rhizobial culture; (7) improved post-harvest technology; (8) remunerative prices relative to competing crops; and (9) marketing support.

To supplement the efforts of the States in increasing the production of pulses, it is proposed to undertake a new Centrally sponsored National Pulses Development Programme.

ANNUAL PLAN (1990-91) REVIEW OF AGRICULTURAL PERFORMANCE : Indian agriculture turned the corner in the fourth year (1988-89) of the Seventh Plan as witnessed by an all-time record growth of 20.75 per cent over the year 1987-88. The agriculture sector recorded a growth rate of 3.13 per cent during the Seventh Plan as compared to a long term growth rate of 2.63 per cent during 1949-50 - 1988-89 and a recent growth rate of 3.80% per annum during the Eighties. The foodgrains production during the Seventh Plan grew by 3.23 per cent as compared to long term growth rate of 2.68 during 1967-68 - 1988-89 and a recent growth rate 2.55% percent recorded in the Eighties. The average production of all the crops excepting coarse cereals in the Seventh Plan showed a substantial increase over the level of the Sixth Plan.Of these, rice and wheat recorded an increase of 14.96 per cent and 18.66 per cent respectively.

TABLE 3.3

TARGETS AND ACHIEVEMENTS OF MAJOR FOOD CROPS DURING THE VII PLAN.

Crop	Unit	Seventh Plan Target	1985-86		1986-87		1987-88		1988-89		1989-90	
			Target	Ach.	Target	Ach.	Target	Ach	Target	Ach	Likely Target	(P) Ach.
1	2	3	4	5	6	7	8	9	10	11	12	13
Food-grains	Million tonnes											
1. Rice	"	71.7-72.7	63.50	63.83	65.00	60.56	64-65	58.86	67.95	70.67	72.51	74.06
2. Wheat	"	54.1-55.1	49.20	47.05	49.00	44.32	50-51	46.17	52.32	53.99	54.00	49.65
3. Coarse Cereals	"	32.9-32.8	33.00	26.20	32.00	26.83	32-32.5	26.36	33.00	31.89	33.75	34.31
4. Total Pulses	"	14.5-14.6	13.50	13.36	14.00	11.71	14-14.5	10.96	13.30	13.70	14.75	12.61
TOTAL Foodgrains	"	173.2*-175.2*	159.20	150.44	160.00	143.42	160.00-163.0	140.35	166.57	170.25	175.01	17.06

* Revised during the Mid-Term Appraisal of the Seventh Plan.

P = Provisional.

PRODUCTION TARGET OF FOODGRAINS FOR 1990-91 : All India targets in respect of foodgrains crops for 1990-91 has been worked out on the basis of production potential and various assumptions and are presented in Table 3.4

TABLE - 3.4

TARGETS OF FOODGRAINS CROP PRODUCTION FOR 1990-91

	Food Grains	Unit	Target 1990-91 Finally agreed
1.	Rice	Million Tonnes	73.7
2.	Wheat	Million Tonnes	54.5
3.	Coarse Cereals	Million Tonnes	33.3
4.	Pulses	Million Tonnes	15.0
		Total:	176.5

SPECIAL PROGRAMMES : Although the development of agriculture is a State subject and its accountability rests with the State Government, the Government of India supplements the efforts of the State Governments in the priority areas for ensuring food security through the implementation of agriculture thrust programmes. Brief description of thrust programmes which were launched during the Seventh Five Year Plan and will continue with some modifications in 1990-91, is given below:

RICE DEVELOPMENT PROGRAMME : A large proportion of rice area is located in the Eastern States of Assam, Orissa, Bihar, Eastern Madhya Pradesh, Eastern Uttar Pradesh and West Bengal where the productivity is lower than the national average. In order to exploit full potential of rice production in these areas, the Special Rice Production Programme (SRPP) was launched during the first year of the Seventh Plan in 430 blocks of these seven States. The scheme was later extended to Tripura in 1988-89 covering its nine blocks.

During the year 1988-89, the SFPP-Rice was introduced with the main objective of augmenting the rice production and productivity. During 1989-90, the SRPP was merged with SFPP - Rice and a unified scheme was launched in 14 States including the 7 States of SRPP. Under the scheme, greater emphasis was laid on the spread of improved rice production technology and adoption of improved varieties, increased and efficient use of inputs. The production of rice which, had declined in 1986-87 and 1987-88 due to unfavourable weather conditions and drought, to 60.56 million tonnes and 56.86 million tonnes respectively increased substantially to 70.67 million tonnes in 1988-89. The increase in rice production can largely be attributed to the successful implementation of both the programmes namely SFPP and SRPP, Rice production during 1989-90 is expected to be about 74.06 million tonnes.

In 1990-91, an Integrated Programme for Rice Development (IPRD) will be implemented in 201 potential Rice districts including 20 selected Basmati Rice growing districts in the States of Andhra Pradesh (13), Assam (15), Bihar (32), Gujarat (4), Haryana (6), Himachal Pradesh (2), Jammu & Kashmir (1), Karnataka (11), Kerala (4), Maharashtra (9), Madhya Pradesh (15), Orissa (13), Punjab (9), Tamil Nadu (9), Tripura (3), Uttar Pradesh (37), West Bengal (16), Goa and Pondicherry, on 75.25 funding pattern to be shared between the Government of India and the concerned States/U. Ts. The main emphasis under the programme will be focussed on (i) spread of adoption of improved rice production technology/location of specific high yieldilng varieties; (ii) increased and efficient use of inputs; (iii) development of on-farm resources by motivating/helping farmers; and (iv) organisation of field demonstration.

WHEAT DEVELOPMENT PROGRAMME : In order to step up the wheat production and productivity in the country, the SFPP-Wheat was

introduced during the fourth year of the Seventh Plan (1988-89) in 71 districts spread over seven States. The programme was extended during 1989-90. Implementation of the programme successfully resulted in increased wheat production from 44.07 million tonnes in 1984-85 to 53.99 million tonnes during 1988-89. It is expected to be 49.65 million tonnes during 1989-90. In order to maintain the tempo of higher production and productivity of wheat built up in the previous years, SFPP-Wheat is being continued during the first year of the Eighth Five Year Plan and will be implemented in 100 districts of the existing seven States of Gujarat, Bihar, Haryana, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh. The State Governments change the districts selected for the implementation of the programme with prior approval of the Government of India. But the total number of districts selected for the State would remain the same.

COARSE GRAINS : Coarse grains are mostly grown in dryland/ rainfed areas by the small and marginal farmers. Of the total foodgrains production of 170.25 million tonnes in 1988-89, the share of coarse grains was about 32 million tonnes (19%). The Special Foodgrains Production Programme (SFPP-Maize) was launched in 1988-89 in 20 districts with main objective of attaining the targeted production of maize during the last two years of the Seventh Plan. During the first year of the Eighth Plan (1990-91), the SFPP-Maize will also be extended to cover Jowar, Bajra and Rabi in 114 identified districts in the 13 States of Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. For increasing the production and productivity of maize and millets, the thrust will be on spread of area under location - specific, pest resistant high yielding varieties/hybrids, popularisation / adoption of improved rainfed production technology, effective plant protection measures through integrated pest management and organisation of demonstration.

NATIONAL PULSES DEVELOPMENT PROGRAMME : Pulses are main source of protein and form a vital part of the diet of the majority of the people in the country. The Produuction of pulses has grown at a much lower pace than that of foodgrains, registering an annual growth rate of 0.74% during 1967-68 - 1988-89 as compared to 2.7% growth rate in cereals in the same period. Pulses production has been stagnating in the range of 11.0 to 13.0 million tonnes over the years. A Centrally Sponsored Scheme of National Pulses Development Programme (NFDP) was launched in 24 States and 2 U.Ts. during the seventh Plan particularly in 1986-87, with the main objective of increasing the pulses production and productivity. The production of pulses during the Seventh Plan exhibited an erratic trend. During 1989-90, the production is expected to be 12.61 million tonnes. Keeping in view the need for maximising the pulses production, the NPDP will be continued during 1990-91. The main thrust under the NPDP will be focused on:-

(1) Improving existing cropping system; (2) Organisation of frontline demonstration general demonstration; (3) Pulses seed through seed village programme; and (4) Distribution of seed minikits/distribution of certified seeds/P.P chemicals and equipment/agricultural implements and dal processing machines.

SMALL AND MARGINAL FARMER'S DEVELOPMENT PROGRAMME FOR INCREASING AGRICULTURAL PRODUCTION : A Centrally Sponsored Scheme, known Special Assistance to Small and Marginal Farmers for increasing the agricultural production was introduced in 1983-84. The scheme was introduced in all the blocks of the country and was continued during the Seventh Plan. The scheme envisages an annual outlay of Rs. 5.00 lakhs per block (Rs. 3.50 lakhs for subsidy on minor irrigation works, Rs.0.50 for distribution of minikits of seeds of oilseeds, pulses and coarse grains, and Rs. 1.00 lakh for land development). The outlay is shared by the Central and State Govts. on 50:50 basis. Considering the success of the scheme, it is being continued in the year 1990-91.

NATIONAL WATERSHED DEVELOPMENT PROGRAMME FOR RAINFED AGRICULTURE : A major shift in emphasis in future development strategies for agriculture will be towards rainfed areas. Apart from the absolute importance of the areas, which comprise around 70 per cent of the country's net sown area and account for bulk of the area under important crops like rice, jowar, bajra, maize, pulses, oilseeds, cotton and jute, greater attention to rainfed agriculture is called for on grounds of equity. The technique of development on the basis of watersheds provides a viable scientific approach to development of rainfed agriculture, especially low to medium rainfall areas.

A Centrally sponsored National Watersheds Development Programme for Rainfed Agriculture was launched during the Seventh Plan in 1986-87. The programme was implemented in 16 states and 99 districts. With a total approved outlay Rs. 239 crores over the plan period of which Rs. 12 crore was to be the Central share, the programme was targetted to cover 2.32 lakh hectares annually. However, mainly because of initial problems relating to the organisation and projectisation of such a technically innovative programme, the States actual expenditure and physical achievements were quite modest. During the first three years of implementation of the programme, aggregate physical coverage was only 3112 hectares. During 1989-90 the programme was targetted to achieve the envisaged annual physical coverage of 2.32 lakh hectares with an outlay of Rs. 25 crore as the Central share.

ANNUAL PLAN (1991-92) AGRICULTURE PRODUCTION DURING 1990-91 : The South-West monsoon was fairly satisfactory in 1990-91. Weather conditions during Kharif 1990 were conducive. Over 81% of the districts received normal to excess rainfall. Rainfall during winter season was also favourable. The storage position in the major reservoirs was also very satisfactory. Due to favourable wseather conditions, the level of

fertiliser consumption, effective implementation of various key programmes and the concerted efforts of State Governments, Central government and farmers, the production of foodgrains in 1990-91 is expected to cross the previous record of 170.63 million tonnes achieved in 1989-90 and has been, tentatively estimated at 176 to 176.5 million tonnes.

TABLE - 3.5

PHYSICAL TARGETS & ACHIEVEMENTS OF MAJOR FOODGRAINS DURING 1990-91.

	Crop	Unit	Target	Anticipated Achievement
1.	Rice	Million Tonnes	73.70	74.6
2.	Wheat	"	54.50	54.0 - 54.5
3.	Coarse Cereals	"	33.30	33.4
4.	Total Pulses	"	15.00	14.0
	Total Foodgrains		176.50	176.0 - 176.5

PRODUCTION TARGETS OF PRINCIPAL CROPS FOR 1991-92 : All India and Statewise targets in respect of foodgrains and commercial crops for 1991-92 have been worked out in consultation with the Department of Agriculture & Cooperation taking into account production potential and broad techno-economic parameters and assumptions as indicated below:

TABLE 3.6

TARGETS OF PRINCIPAL CROPS PRODUCTION FOR 1991-92

	Foodgrains	Unit	Target 1991-92
1.	Rice	Million Tonnes	76.50
2.	Wheat	"	56.50
3.	Coarse Cereals	"	34.00
4.	Pulses	"	15.50
	Total	"	182.50

SPECIAL PROGRAMMES : The Goverment of India supplements efforts of State govts in the priority areas for ensuring food security.The thrust programme which were launched during the 7th Plan and continued with some modifications during 1990-91 and 1991-92, are briefly highlighted below:

RICE DEVELOPMENT PROGRAMME : Rice is a major cereal crop in India and it is grown in about 41 million hectares. Though India is the largest rice producing country, per unit area production is estimated at 1.7 tonnes per hectare which is below the world average of 2.2 tonnes per hectare. Dependence of rice cultivation on rainfall is one of the main reasons for low productivity. Out of 41 million hectares, only about 17 million hectares are irrigated. In order to exploit full potential of rice production in Eastern States of Assam, Orissa, Bihar, Eastern M.P., Eastern U.P. and West Bengal, a Special Rice Production Programme (SRPP) was launched during the first two years of the 7th Plan in 430 blocks of these 6 states. The scheme was later extended to Tripura in 1989-90. During 1988-89, another rice development programme known as SFPP: Rice (Special Foodgrain Production Programme) was introduced with the main objective of augmenting rice production and productivity in the country. In 1989-90, SRPP was merged with SFPP-Rice and a unified scheme was launched in 14 States including the 7 states of SRPP. During the terminal years of the 7th Plan, the implementation of the unified scheme of rice development reached the level of 74.06 million tonnes (1989-90) from 58.34 million tonnes in 1984-85.

In 1990-91, an Integrated Programme for Rice Development (IPRD) was introduced in 202 potential rice districts,including 20 selected basmati rice growing districts, in 19 States - Andhra Pradesh (13), Assam (15), Bihar (32), Gujarat (4), Haryana (6), U.P. (38), Himachal Pradesh (2), Jammu & Kashmir (1), Karnataka (11), Kerala (4), Maharashtra (9), Madhya Pradesh (15), Orissa (13), Punjab (9), Tamil

Nadu (9), Tripura (3), West Bengal (16), Goa (1) and Pondicherry (1) on 75:25 funding pattern to be shared between govedrnment of India and the concerned States/UT. An outlay of Rs. 87.00 crores as Government of India's share was provided for the programme during 1990-91. The main objective of the implementation of IPRD is to increase production and productivity of rice through propagation of improved rice production technology. Besides, IPRD aims at increasing the production of basmati rice in potential districts in Punjab, Haryana and U.P. for export purposes. During 1990-91, production of rice is likely to reach an all time high of about 75 million tonnes comfortably passing the target of 73.70 million tonnes. The IPRD programmes will be continued in 239 districts of 24 States during 1991-92. Arunachal Pradesh, Manipur, Meghalaya, Nagaland and Mizoram have also been covered under the programme. A target of rice production of 76.5 million tonnes has been fixed for 1991-92.

The main components to be implemented under IPRD during 1991-92 include (i) distribution of inputs such as certified seed of paddy, zinc sulphate, plant protection chemicals and equipments, seed treating chemicals and agricultural implements to resource poor, small and marginal farmers at subsidised rates; (ii) organisation of training programmes for farmers and farm labourers including women; (iii) organisation of field demonstration on herbicide use, rainfed rice production technology, low cost rice production technology and Basmati rice production technology with improved varieties (iv) organisation of frontline demonstration of new and appropriate varieties and package of technology for rainfed rice system and (v) distribution of power tillers to a group of small and marginal farmers, farmer's agro service centres and Group Farming Societies on subsidy of 33.3% subject to Rs. 10,000/- per tiller.

WHEAT : In order to boost wheat production in the country,SFPP-Wheat was introduced in 1988-89 in 71 districts spread over 7 states. The programme components were : seed distribution, buffer stocking of seeds, termite control, use of soil ameliorants and use of herbicides. SFPP - Wheat was extended during 1989-90 with some modifications in these components. The implementation of the programme helped in increasing wheat production from a level of 45.17 million tonnes in 1987-88 to 54.11 million tonnes in 1988-89. Despite adverse weather conditions in some of the States at the sowing time of the crop in 1989-90, about 50 milion tonnes of wheat was produced. Based on the experience of the implementation of this programme in the two terminal years of the 7th Plan, the SFPP-Wheat was extended during 1990-91 and it was implemented in 101 districts of 7 States, viz. Bihar (16), Gujarat (7), Haryana (7), Madhya Pradesh (21), Punjab (8), Rajasthan (14), and U.P. (28). The wheat production is expected to be of the order of 54-54.50 million tonnes during 1990-91.

The SFPP-Wheat will be implemented during 1991-92 in 131 districts spread over in 7 States with main emphasis on distribution of certified seeds, minikit of micronutrients like zinc sulphate, herbicides, plan protrection equipments, and field demonstration ;on individual farmers' holding/on holdings of group of farmers on herbicides use and propagation of H.Y.V. of dureum wheat. A target of 56.50 million tonnes of wheat production has been fixed for the year 1991-92.

PULSES : Pulses are the main source of protein and form a vital part of the diet of the majority of the people in the country. Pulses production has been stagnating in the range of 11 to 14 million tonnes over the years. Its productivity has also not shown any improvement. Per capital availability of pulses declined from 69.0 gm per day in 1961 to 40.4 gm per day in 1989. Two thrust programmes, namely,

National Pulses Development Programme (NPDP) and Special Foodgrains Production Programme (SFPP) Pulses were introduced during the 7th Five Year Plan to supplement the efforts of the State Governments for achieving higher production and productivity of pulses. The National Pulses Development Programme is in operation from 1986-87 in 24 States and 2 UTs, namely Delhi and Andaman & Nicobar Islands. Keeping in view the need for maximising pulses production, NPDP will be continued during 1991-92. The main thrust under the programme wil be focussed on adoption of location specified varieties and improved production technology. Besides the main components of the programme are: demonstration, production and distribution of certified seeds, distribution of plant protection equipments and agricultural implements and organisation of training. The SFPP-Pulses covering gram and arhar was introduced during the last two years of the 7th Plan. It was extended during 1990-91 and will be continued during 1991-92. During 1991-92, the main emphasis under the programme will be focussed on encouraging the cultivation of summer pulses and control of pests and diseases. In order to bridge the gap between demand and supply of pulses in the country, these two programmes NPDP and SFPP-Pulses, will be given technology approach under the umbrella of TMO. The pattern of assistance under NPDP will continue to be 75:25 to be shared between Govt. of India and the State Govt. while central assistance will be 100% under S.F.P.P. TMO will exclusively look after the development programmes of pulses. Production target of pulses fixed for 1991-92 is 15.50 million tonnes.

COARSE CEREALS : Coarse cereals experience wide fluctuation in production and have very low productivity. The main constraints in increasing the coarse grains production are low coverage of area under high yielding varieties/hybrids, reluctance of the farmers to invest on inputs due to the sensitivity of these crops to climatic conditions and

high susceptibility of these grains to pests and diseases. The Minikit Programme of maize and Millets including propagation of new technology is being implemented in all the States and Union Territories with the main objective of popularising cultivation of new high yielding varieties/hybrids and encouraging adoption of improved production technology for increasing production and productivity per unit of area. The programme component includes free distribution of minikits of seeds of new varieties training of extension personnel at district level and propagation of new technology of maize and millet cultivation in SC and ST areas. In addition, Special Fopodgrains Production Programme-Maize was introduced and implemented in 28 districts of 5 states during 1988-89 and 1989-90 with 100% central assistance. The implementation of this programme helped in increasing maize production from 5.72 million tonnes in 1987-88 to 8.23 milion tonnes in 1988-89 and further to 9.41 million tonnes in 1989-90. In view of the success of SFPP-Maize achieved during the last two years of the 7th Plan the programme was extended during 1990-91 to cover other major coarse grains like Jowar, Bajra and Rabi. The programme was implemented with the new name SFPP-Maize and Millets in 114 identified districts spread over 13 States of Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, J& K, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu and U.P. During 1991-92, the SFPP Maize and Millets is proposed to be implemented in 205 districts spread over 13 States, SFPP-Jowar in 68 districts of 6 States, SFPP-Bajra in 49 districts of 6 States, SFPP-Rabi in 29 districts and SFPP-Maize in 59 districts of 10 States. A target of 34.00 million tonnes of coarse grains has been fixed for the year 1991-92.

EIGHTH FIVE YEAR PLAN 1992-93 TO 1996-97 : The Eighth Plan will aim at consolidating the gains from the base built over the years in agricultural production; sustaining the improvments in productivity and production to meet the increasing demands of the growing population;

enlarging the incomes of farmers, and realising the country's potential by stepping up agricultural exports. While the production of several commodities has shown significant increases, a cause for major continuing concern is that the growth rates in agricultural production is highly skewed in terms of geographic areas as amongst crops. Rapid improvement in productivity and production of a few of the agricultural crops, since the introduction of high yielding varieties technology from the mid-sixties, has been conspicuous only in small pockets of well endowed irrigated areas. Eastern India in the heavy rainfall zone the vast rainfed tracts in the country and the hill regions have not been able to adopt the technologies for achieving high growth rates. It will be of crucial significance, not only on account of the need to reduce regional disparities but also essentially to raise production levels, that far greater attention is devoted to bring about an accelerated growth in areas which have relatively lower growth. Efforts to concentrate on productivity of principal crops in these regions through programmes initiated in the Sixth and the Seventh Plans will have to be further intensified. Appropriate technologies designed to meet the specific location problems, need to be generated.

In the rainfed areas, farming system approach should be the basis for enabling farmers to make scientific and optimum use of their land and water resources to increase their incomes. Diversification of the agricultural production systems may be called for, together with scientific management of land, to prevent soil erosion and achieve better in situ moisture conservation. A holistic approach towards the development of rainfed areas, which forms the raison d'etre for the restructured National Watershed Development Programme for the Rainfed Areas, cannot be over emphasised. This programme will be adequately funded and implemented vigorously.

The procurement and support prices for important agricultural crops will be fixed by taking into consideration factors like cost of production, change in market prices, input-output parity, inter-crop price parity, effects on industrial cost structure, etc. A suitable price policy could play a vital role in giving appropriate signals to farmers and also help in providing incentives for steppping up agricultural investments. A major aspect of this policy will be to ensure adequate return on investment made by the farmer. In this, the recommendations of various expert committees will be considered by government and necessary modifications effected. The price policy will be reviewed keeping in view the major objectives of moving towards commercialisation of agriculture, achievement of food security and generation of adequate surplus for export.

CROP PRODUCTION ORIENTED PROGRAMMES : Many of the important programmes to maximise production of several crops will be continued during the Eighth Plan. Those include: the Special Foodgrains Production Programme in respect of rice, wheat, coarse cereals, as well as programme like the oilseeds, pulses, cotton development, etc. The focus of these programmes is to extend improved technologies amongst the farmers. Demonstrations of the latest technologies consititute a critical element of these programmes. These will have to be stream lined, systematised and closely monitored to get the optimum results. The farmers' acceptance of the technologies will be facilitated through successful demonstrations. A far greater planning in the organisation of demonstrations will be sought to be achieved. Special efforts will be made to reorient the programmes to address themselves to the basic constraints faced by the farmers in the States/Areas where the current yield levels are low, as in the case of rice in Eastern India, wheat in Bihar, Madhya Pradesh and Eastern UP and coarse cereals in the Central and Western part of India. A further intensification of measures to

improve productivity and production of pulses and oilseeds will be achieved under the programmes through linkage with the technologies being generated by the Indian Council of Agricultural Research State Agriculture University (ICAR-SAU) research system.

In particular, the emphasis will be on production of Basmati rice which is one of the top foreign exchange earners. The propsects of exports of hard wheat (durum) are also bright and production will have to be improved. Coarse cereals not only constitute the staple diet in several regions but also have industrial use as well as in the manufacture of cattle/poultry feeds.

TARGETS OF PRODUCTION OF PRINCIPAL CROPS : The targets of crops production as well as likely area of the principal crop or groups of crops are given in the Table 3.7. Targets of major agricultural crops for the Eighth Five Year Plan have been projected on the basis of agricultural sub-model which takes into account factors, such as gross irrigated area, gross cropped area, fertiliser consumption, area expansion, rainfall index and outputs in a regression frame work the Targets proposed above would call for much higher efforts in the eighth Plan than the earlier plans.

TABLE - 3.7

AREAWISE BREAK-UP OF ALL INDIA TARGETS OF PRINCIPAL CROPS

P - Production-million tonnes
A - Area-million tonnes
Y - Yield-Kgha

Crop	1991 - 92 $			1996 - 97		
	A	P	Y	A	P	Y
1. Rice	42.50	72.50	1706	43.50	88.00	2023
2. Wheat	32.50	56.00	2383	24.25	66.00	2722
3. Coarse Grains	37.50	30.00	800	37.75	39.00	1033
4. Pulses	23.50	14.00	596	24.50	17.00	694
5. AII Foodgrains	127.00	172.50	135	130.00	210.00	1615
6. Oilseeds	23.50	17.50	74	24.50	23.00	939
7. Sugarcane	3.70	235.00	63514	3.90	275.00	70513
8. Cotton	7.40	10.50	241	7.50	14.00	317
9. Jute & Mesta	1.00	9.00	1620	1.00	9.50	1710
10. Other Crops	19.60			23.70		
11. All Crops	82.20			190.60		

$ Likely Achievement
* In million bales of 170 Kg each
** In million bales of 180 Kg each

REPORTS OF THE COMMISSION FOR AGRICULTURAL COSTS AND PRICES ON PRICE POLICY FOR IN 1994-95 SEASON *:

PRICE POLICY, PROCUREMENT AND MARKET PRICES : The report on Price Policy for Kharif Crops of 1993-94 Season was submitted by the Commission on March 19, 1993. The Government announced the price policy for foodgrains, oilseeds and cotton on July 22, 1993. In the case of paddy, the minimum support price (MSP) fixed for common variety at Rs. 310 per quintal was the same as recommended by the Commission whereas in the case of fine and superfine varieties, the prices fixed at Rs. 330 and Rs. 350 per quintal respectively were Rs. 10 and Rs. 20 higher than that recommended by the Commission. Thus the differential between the MSP of common and fine varieties as also that between the fine and superfine varieties of paddy were raised from Rs. 10 to Rs. 20 per quintal. In the case of coarse grains, pulses and soyabean, the MSP fixed were the same as recommended by the Commission. The MSP was Rs.

260 each for jowar, bajra and rabi, Rs. 265 for maize, Rs. 700 each for tur, moong and urad, Rs. 525 for soyabean (black) and Rs. 580 per quintal for soyabean (yellow). The MSP for groundnut and sunflower seed were fixed at Rs. 800-850 per quintal against the recommended prices of Rs. 790 and Rs. 830 per quintal respectively. In the case of cotton also, the MSP fixed was higher than that recommended by the Commission. While the Commission recommended a price of Rs. 850 for F-414/H-777 variety and Rs. 1000 per quintalfor H-4 variety of cotton, the Government fixed these at Rs. 900 and Rs. 1050 per quintal respectively. In the case of VFC tobacco, the MSP fixed at Rs. 18 per Kg for F-2 grade and Rs. 20 per Kg for L-2 grade were the same as recommended by the Commission.

PROCUREMENT/SUPPORT PURCHASES : The procurement of rice aggregating to 12.7 million tonnes by the end of March, 1994 during the current marketing year was higher by 10.9 per cent than that during the corresponding period of the preceding year. This consisted of eight million tonnes procured as levy from rice millers and the remaining being the rice equivalent of the paddy purchased under price support operations. The quantity procured was 5.4 million tonnes in Punjab, 2.7 in Andhra Pradesh, 1.3 in Uttar Pradesh, 1.22 in Haryana and 0.7 million tonnes in Madhya Pradesh. In Tamil Nadu where the monopoly procurement scheme prevailing in the Cauvery delta region was terminated in May, 1993, 0.5 million tonnes of rice was procured as against 1.1 million tonnes during the corresponding period of the preceding years. In Bihar also, some quantity of paddy was purchased at the minimum support prices. As regards coarse cereals, only 0.2 lakh tonnes were purchased under price support operations during the current marketing year upto March 18, 1994 as against 2.4 lakh tonnes during

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* Commission for Agricultural Costs and Prices, Department of Agriculture and Corporation, Ministry of Agriculture, Government of India, New Delhi, 1995.

the corresponding period of the preceding season. In addition, 0.7 lakh tonnes of black and discoloured jowar was purchased in Maharashtra at an adjusted price with a view to providing price support to the growers. It may be mentioned that during the preceding year also four lakh tonnes of such inferior quality jowar was purchased.

STOCKS : The stocks of foodgrains with the public agencies had remained below the minimum stipulated levels at the beginning of each quarter from July, 1991 to January, 1993. However, the stocks as on April 1, 1993 at 14.7 milion tonnes were 0.2 million tonnes higher than the stipulated minimum stocks for that date. Subsequently, the excess of the actual stocks over the stipulated minimum increased considerably. As on July 1, 1993, the stocks at 26.4 million tonnes were higher by 4.1 million tonnes over the minimum stocks stipulated for that date. The stocks as on October, 1, 1993 were higher by six million tonnes and as on January 1, 1994, these were higher by 8.1 milion tonnes than the minimum stipulated levels for these dates. The stocks of foodgrains continued to increase further and as on Fbeuary 1, 1994 were 23.5 million tonnes consisting of 13.3 million tonnes of rice, 9.8 million tonnes of wheat and 0.4 million tonnes of coarse grains.

PUBLIC DISTRIBUTION : The offtake of foodgrains from the central pool for public distribution during 1993 was 14.9 million tonnes, consisting of 5.8 million tonnes of wheat and 9.1 million tonnes of rice. At this level, the offtake was 3.3 million tonnes lower than the average offtake during the preceding two years. The average offtake of wheat and rice during the preceding two years was 8.6 million tonnes and 9.6 million tonnes respectively. The offtake of wheat during 1993 was considerably low due to comfortable availability of coarse cereals and the narrowing down of the differential between the open market prices and the central issue prices for the PDS.

PRICE BEHAVIOUR PADDY/RICE : The average of wholesale price indices for rice for the peak marketing period (October to January) of the current season at 273.6 wes 9.8 per cent higher than the average for the corresponding period of the preceding season. The increase was 9.2 per cent during the corresponding period of 1992-93 season. On a point to point basis, in January, 1994 as also in January, 1993 the annual increase in the price of rice was lower than that in the general price level. While the annual increase in WPI for rice was 3.3 per cent in January, 1993 and 7.3 per cent in January, 1994, that for 'all commodities' was 7.5 and 8.2 per cent respectively.

For the second year in succession, the prices of paddy during the peak marketing period of 1993-94 were reported below the minimum support level in some selected centres of the important producing states. The month-end wholesale prices of paddy were reported below the minimum support price at several centres in Uttar Pradesh. The month-end wholesale prices during the period October, 1993 to January, 1994 were quoted in the range of Rs. 265-295 per quintal at Mainpuri, during the period November-December, 1993 in the range of Rs. 280-295 at Bahraich and Rs. 225-295 per quintal at Kanpur. In Thanjavur (Tamil Nadu), the month-end wholesale prices were quoted in the range of Rs. 288-305 per quintal for October and November, 1993. In Chandbali (Orissa), the prices were reported below the minimum support level by Rs. 50 to Rs. 60 per quintal between November, 1993 and January, 1994. Even in Haryana the month-end wholesale prices of paddy at Karnal were quoted at Rs. 300 per quintal for October, 1993.

The prices of rice also were quoted below the levy derived from the MSP of paddy at several centres. In Madhya Pradesh, the month end wholesale prices of rice of common variety at Raipur and Durg were quoted between Rs. 490 and Rs. 495 per quintal for the period October, 1993, to December, 1993 as against the derived levy price of Rs. 512.85 per

quintal for the State. In Orissa, as against the derived levy price of Rs. 528.80 per quintal for common rice, the month-end wholesale prices was quoted at Rs. 500 per quintal at Jeypore for the Period October, 1993 to January, 1994 and at Rs. 520 per quintal at Cuttack for January, 1994 despite 2.9 lakh tonnes of rice being purchased by the public agencies in the State. In Uttar Pradesh also, the month end wholesale prices of rice at Varanasi for December, 1993 were quoted below the derived levy price of Rs. 501.45 per quintal.

COARSE CEREALS : The WPI for jowar, after touching a peak of 293.6 for July, 1992, declined almost steadily to 176.7 for October, 1993. The average of wholesale price indices for October, 1993 to January, 1994 at 186.2 was 21.3 per cent lower than the average for the corresponding period of the preceding season. Not only that the prices during the current season were lower than those during the preceding season, these also ruled below the minimum support level in several markets of important producing states.

In Karnataka, the month-end wholesale prices of jowar for October, 1993 to January, 1994 were quoted in the range of Rs. 150-240 per quintal at Haveri and in the range of Rs. 170-200 per quintal at Savanur as against the MSP of Rs. 260 per quintal. In Uttar Pradesh, the month-end wholesale prices were quoted in the range of Rs. 185-245 per quintal between October, 1993, and January, 1994 at Bahraich and in the range of Rs. 225-230 per quintal between October and November 1993 at Kanpur. In Maharashtra also, these were quoted in the range of Rs. 211-257 at Nagpur and in range of Rs. 185-220 per quintal at Amravati during the peak marketing period of October, 1993 to January, 1994.

In some of the important markets of Maharashtra, the price support for jowar not conforming to Fair Average Quality (FAQ) specification is reported to have been provided at a lower price of Rs.190 per quintal. In this context, it may be mentioned that during the preceding

marketing season also, over four lakh tonnes of grains not conforming to FAQ specifications were purchased by the state agencies at a lower support price.As these grains could not be disposed off at the economic cost, the designated agency is reported to have suffered severe financial losses. Unless such losses incurred by the public agencies are reimbursed in full, the public agencies will find it difficult to provide effective price support for coarse cereals. It is pertinent to recall here that the Commission in its report on Price Policy for Kharif Crops of 1993-94 season had observed that non-reimbursement of such losses incurred by the state agencies has been a major constraint in providing effective price support to coarse cereals. The Commission, therefore, reiterates its earlier recommendation that the price support for coarse cereals be made effective and losses incurred on this account by the support agencies be reimbursed in full.

The average of wholesale price indices for bajra for the peak marketing period (October to January) was higher by 14.1 per cent during 1993-94 than the average for the corresponding period of 1992-93. However, in a number of markets, the prices of bajra were reported below the minimum support level during the peak marketing period of the current season. The month-end wholesale prices were quoted in the range of Rs. 240-250 per quintal at Nellore (Andhra Pradesh) and Rs. 185-240 at Kanpur for October and November, 1993. These were quoted in the range of Rs. 221-239 per quintal at Pathardi, Pachora and Aurangabad markets of Maharashtra for October, 1993. At Morena (Madhyua Pradesh), the month-end wholesale prices were quoted at Rs. 200 per quintal both for October and November, 1993.

The average of the wholesale price indices for maize for the peak marketing period (October-January) of 1993-94 was higher by 6.6 per cent than the average for the corresponding period of 1992-93. In the case of maize being quoted below the support level during the current

marketing season. In Madhya Pradesh, the month-end wholesale prices of maize at Chindware were quoted in the range of Rs. 235-245 per quintal and at Jhabua, in the range of Rs. 240-260 per quintal for the period October-December, 1993. At Karimnagar (Andhra Pradesh), the month-end wholesale prices were quoted in the range of Rs. 237-243 for October and November 1993 and at Gokak (Karnataka) in the range of Rs. 200-245 per quintal for November and December 1993. The Food Corporation of India, with the help of the state agencies is reported to have purchased about 18,500 tonnes of maize upto the end of January, 1994 but the scale of operation was not enough to prevent the prices from falling below the minimum support level.

The average of wholesale price indices for rabi for the peak marketing period, which was higher by 28.3 per cent during 1992-93 over the average for the corresponding period of the preceding season, was lower by 9.9 per cent during the current season than that during 1992-93. The month-end wholesale prices of rabi were quoted between Rs. 310 and 330 per quintal at Madanapalli (Andhra Pradesh) and between Rs. 330 and 337 at Salem (Tamil Nadu) during the period October, 1993 to January, 1994 as against the minimum support price of Rs. 260 per quintal.

PULSES : The average of wholesale price indices for pulses as a group for the period October, 1993 to January, 1994 was 33.99 per cent higher than the average for the corresponding period of the 1992-93 season. The index moved up steadily from 256.4 for April, 1993 to 320.7 for October, 1993 and further to 350.8 for January, 1994. This happened mainly due to the steep increase in the prices of gram.

The wholesale prices of tur during the period October-January which had declined by 9.9 per cent during 1992-93 over that during the corresponding period of the preceding season were higher by 17.5 per cent during 1993-94 in comparison to that during 1992-93. The month end wholesale prices for tur for the period October, 1993 to January, 1994

were quoted in the range of Rs. 950-1065 at Aurangabad (Maharashtra), Rs. 1010-1150 at Kanpur and in the range of Rs. 900-1100 per quintal at Vijayawada (Andhra Pradesh).

The wholesale prices of moong during the period October-January were higher by 19.8 per cent during 1993-94 than that during the correspondikng period of 1992-93. The month-end wholesale prices of moong between October, 1993 and January, 1994 were quoted in the range of Rs. 951-1300 per quintal at Aurangabad, Rs. 940-1050 at Vijayawada Rs. 1030-1250 at Patan (Gujarat) and in the range of Rs. 815-1150 per quintal at Hapur (Uttar Pradesh).

Although the average of the wholesale price indices for Urad for the period October 1993-January 1994 was higher by 10 per cent than that for the corresponding period of 1992-93, yet this was 2.7 per cent lower than that during the corresponding period of 1991-92. During the current marketing season, there were reports of prices having ruled below the minimum support level from some selected centres. For example, at Vijayawada, the month end wholesale prices were quoted in the range of Rs. 640-650 per quintal for October-November, 1993. The National Agricultural Cooperative Marketing Federation (NAFED) which was required to provide price support to the farmers is reported to have purchased about 12,350 tonnes of urad from Maharashtra and 1120 tonnes from Karnataka under price support operations during the kharif 1993-94 season. Despite this, the situation of prices continuing to rule below the minimum support level could not be prevented.

BEHAVIOUR OF INPUT PRICE, TERMS OF TRADE AND COST OF PRODUCTION : INPUT PRICES : Since submission of the Commission's last report on price policy for Kharif crops in March, 1993, the prices/rates of some of the purchased inputs have gone up. There has been a marked increase in the electricity tariff/rates for irrigation. In Bihar, with effect from July 1, 1993 the flat rate per month for private tubewells has been

increased from Rs. 22.50 to Rs. 30 per BHP and that for state tubewells/lift irrigation from Rs. 90 to Rs. 120 per BHP. In Punjab, with effect from October 23, 1993, the flat rate for electricity for irrigation has been raised from Rs. 25 to Rs. 50 per BHP per month. It is understood that the State Government is contemplating to raise the tariff further to Rs. 100 per BHP per month. In Gujarat also, the electricity rates have been raised with effect from June 1, 1993. With this revision, farmers using motors upto 7.5 HP are required to pay Rs. 350 per HP as against the earlier rate of Rs. 192 per HP annum. Similarly, for users of motors above 7.5 HP, the electricity rate has been increased from Rs. 360 to Rs. 600 per HP per annum with the option to pay meter tariff at the rate of 50 paise per unit. As a consequence of the changes effected by various states in the electricity tariffs, the wholesale price index for electricity for irrigation increased by 26.7 per cent 182.7 for March, 1993 to 231.5 for February, 1994.

As regards seeds, the National Seeds Corporation has effected increase in the prices of certified seeds for paddy and jowar by 15.4 and 21.2 per cent respectively. The prices of certified seeds for maize, sunflower and soyabean have, however, been lowered by around 16 per cent each. It may also be mentioned that most of the State Seeds Corporations are likely to increase the prices of certified seeds for the ensuing Kharif season. Farmers also depend on open market purchases for meeting their seed requirements. Since the wholesale price indices for Kharif crops like rice, jowar, tur, groundnut etc. increased by 8 to 40 per cent between March, 1993 and February, 1994 the market prices of seeds are likely to go up in the ensuing Kharif season.

TERMS OF TRADE : The terms of trade for the agricultural sector which showed an improvement from 86.5 during 1989-90 to 90.0 during 1990-91 and further to 90.7 during 1991-92, deteriorated to 84.9 during 1992-93. While the index of prices received for commodities sold by

the agricultural sector increased by 2.4 per cent from 516.9 during 1991-92 to 529.1 during 1992-93, the corresponding increase in the index of prices paid was 9.3 per cent. Here it may be stated that the index of prices paid for intermeding consumption increased by 15.6 per cent mainly due to the steep rise in the prices of fertilizers. As regards the prices received by the agricultural sector, while the index of prices received for commodities sold for final consumption increased by 8.5 per cent, that for commodities sold for intermediate consumption which form raw materials for the industries, decreased by 6.4 per cent between 1991-92 and 1992-93. Regarding the current year, the provisional data for the period April, 1993 to January, 1994 indicate that there was some improvement in the terms of trade for the agricultural sector. During this period, while the index of the prices of commodities sold by the agricultural sector increased by 9.0 per cent, that of the commodities purchased by the agricultural sector went up by only 5.8 per cent. As a consequence, the terms of trade for the agricultural sector are estimated to recover from 84.9 during 1992-93 to 87.5 during 1993-94.

COST OF CULTIVATION/PRODUCTION OF PADDY : After submission of the Commission's Report on Price Policy for Kharif crops of 1993-94 season, four estimates of cost of cultivation/production for paddy for the year 1991-92 have become available pertaining to the States of Haryana, Punjab, Madhya Pradesh and West Bengal. Estimates have also become available for 1988-89 to 1990-91 pertaining to Madhya Pradesh, 1988-89 and 1990-91 for Andhra Pradesh and 1987-88 for Bihar. The cost of cultivation of paddy for Haryana is estimated to have increased by 19.1 per cent from Rs. 8608 for 1990-91 to Rs. 10252 per hectare for 1991-92 and cost of production from Rs. 212.89 for 1990-91 to Rs. 241.09 per quintal for 1991-92. Higher expenditure on human labour, irrigation and bullock labour mainly account for this increase in the cost of cultivation. For Punjab, the cost of cultivation is estimated at Rs.

10391 for 1991-92 as against Rs.10082 per hectare for 1990-91 and cost of production at Rs. 206.77 for 1991-92 as against Rs. 194.69 per quintal for 1990-91. For Madhya Pradesh, the cost of cultivation is estimated to have increased by 15.4 per cent Rs. 4462 for 1990-91 to Rs. 5150 per hectare for 1991-92 mainly on account of increased expenditure on human labour, fertilizers and manures.As the yield on sample holdings during the year declined by 18.1 per cent from 15.98 to 13.08 quintals, the estimated cost of production of paddy for the state went up from Rs. 230.54 for 1990-91 to Rs. 328.93 per quintal for 1991-92. For West Bengal, the cost of cultivation and cost of production for 1991-92 are estimated at Rs. 9698 per hectare and Rs. 222.54 per quintal respectively. The cost of cultivation and cost of production for Andhra Pradesh are estimated at Rs. 10258 per hectare and Rs. 216.13 per quintal respectively for 1990-91 and for Bihar at Rs. 3844 per hectare and Rs. 175.77 per quintal respectively for 1987-88.

The C cost of production of paddy for the year 1991-92 works out at Rs. 291 for Haryana, Rs. 245 for Punjab, Rs. 376 for Madhya Pradesh and Rs. 271 per quintal for West Bengal. For Andhra Pradesh and Bihar, the estimates are placed at Rs. 259 for 1990-91 and Rs. 204 per quintal for 1987-88 respectively. On the basis of observed trend in the prices of variable inputs during the period 1985-86 to 1991-92 and changes effected in the administered prices of various farm inputs, the variable input price index for 1994-95 is estimated to be higher by 38.8 per cent for Haryana 35.9 per cent for Punjab, 39.6 per cent for Madhya Pradesh and 33.8 per cent for West Bengal over that for 1991-92. After adjusting for these increases in the variable input price indices and using the triennium average yield on sample holdings, the C_2 cost of production of paddy for 1994-95 is projected at Rs. 323 for Haryana, Rs. 237 for Punjab, Rs. 364 for Madhya Pradesh and Rs. 317 per quintal for West Bengal. The C cost of production of paddy for the 1994-95

crop is projected at Rs. 390 for Haryana, Rs. 281 for Punjab, Rs. 416 for Madhya Pradesh and Rs. 386 per quintal for West Bengal.

COARSE CEREALS : Since submission of the Commission's Report on Kharif crops of the 1993-94 season, the estimates of cost of cultivation/production for Jowar for the yeaar 1991-92 have become available in respect of Madhya Pradesh. Estimates have also become available for Andhra Pradesh for the year 1988-89 and for Maharashtra for 1987-88 and Madhya Pradesh is estimated to have increased by 3.7 per cent from Rs. 3121 for 1990-91 to Rs. 3236 per hectare for 1991-92 but due to 31.9 percent decline in yield on sample holdings, the cost of production increased sharply by 55.7 per cent from Rs. 219.19 to Rs. 341.25 per quintal. The cost of cultivation and cost of production of jowar for Andhra Pradesh for the year 1988-89 are estimated at Rs. 1641 per hectare and Rs. 283.90 per quintal respectively. In respect of Maharashtra, the cost of cultivation and cost of production are estimated at Rs. 2290 per hectare and Rs. 1447.74 per quintal respectively for 1987-88 and Rs. 2959 per hectare and Rs. 167.85 per quintal respectively for 1989-90. The C cost of production of jowar works out at Rs. 418 for Madhya Pradesh for 1991-92, Rs. 348 for Andhra Pradesh for the year 1988-89 and at Rs. 201 per quintal for Maharashtra for 1989-90.

For bajra, the estimates of cost of cultivation/ production have become available for 1991-92 pertaining to Haryana and for 1987-88 pertaining to Maharashtra. The cost of cultivation of bajra for Haryana is estimated to have increased by 22.8 per cent from 3238 for 1990-91 to Rs. 3978 per hectare for 1991-92, largely due to higher imputed rental value of owned land and higher expenditure on machine labour. This coupled with a decline in yield on sample holdings by 16.2 per cent led to an increase in cost of production by 37.3 percent from Rs. 228.26 for 1990-91 to Rs. 313.51 per quintal for 1991-92. In the case of

Maharashtra, the cost of cultivation and cost of production for the year 1987-88 are estimated at Rs. 2095 per hectare and Rs. 175.10 per quintal respectively. The C_3 cost of production of bajra works out at Rs. 382 for Haryana for 1991-92 and Rs. 192 per quintal for Maharashtra for 1987-88.

As regards MAIZE, the estimates of cost of cultivation/production for the years 1989-90 and 1991-92 have become available for Madhya Pradesh and for 1986-87 to 1989-90 for Rajasthan. The cost of cultivation for Madhya Pradesh is estimated to have increased by 10.2 per cent from Rs. 2805 for 1990-91 to Rs. 3093 per hectare for 1991-92. Due to 24.6 per cent decline in yield on sample holdings, the cost of production of maize in the State went up by a higher margin of 49 per cent from Rs. 206.83 for 1990-91 to Rs. 308.43 per quintal for 1991-92. The cost of cultivation and cost of production of maize for Rajasthan have been estimated at Rs. 3552 per hectare and Rs. 181.62 per quintal respectively for the year 1989-90. The C_3 cost of production of maize works out at Rs. 371 for Madhya Pradesh for 1991-92 and at Rs. 212 for Rajasthan for 1989-90.

PULSES : In the case of moong, the estimates made available to the Commission after submission of its report for Kharif crops of the 1993-94 season pertain to the year 1990-91 and 1991-92 in respect of Orissa. Estimates have also become available for Andhra Pradesh for the year 1990-91. The cost of cultivation of moong for Orissa is estimated to have gone up from Rs. 1888 for 1990-91 to Rs. 2556 per hectare for 1991-92. However, due to improvement in yield on sample holdings during the period from 243 Kg to 331 Kg, there was a nominal decline in the cost of production from Rs. 749.95 for 1990-91 to Rs. 743.80 per quintal for 1991-92. The cost of cultivation and cost of production of moong for Andhra Pradesh for the year 1990-91 are estimated at Rs. 2322 per hectare and Rs. 713.18 per quintal respectively. The C_3 cost of

production of moong for the year 1991-92 works out at Rs. 935 for Orissa for 1991-92 and at Rs. 859 per quintal for Andhra Pradesh for 1990-91.

As regards urad, estimates have become available for Orissa for 1991-92, Andhra Pradesh for 1990-91 and Uttar Pradesh for the year 1987-88 to 1989-90. The cost of cultivation and cost of production of urad for Orissa are estimated at Rs. 2318 per hectare and Rs. 538.21 per quintal respectively for the year 1991-92. For Andhra Pradesh, the cost of cultivation and cost of production of urad are estimated at Rs. 2833 per hectare and Rs. 560.69 per quintal respectively for 1990-91 and for Uttar Pradesh at Rs. 3472 per hectare and at Rs. 760.48 per quintal respectively for the year 1989-90. The C_3 cost of production works out at Rs. 721 for Orissa for 1991-92, Rs. 657 for Andhra Pradesh for 1990-91 and Rs. 857 per quintal for Uttar Pradesh for 1989-90.

The Commission in its earlier reports has drawn attention towards limitations of using the cost of production data for a single year in the case of crops grown mainly under rainfed conditions like coarse ereals, pulses and oilseeds. Because of sharp inter year and inter state fluctuations in their yield, projections of cost of production for these crops cannot be relied upon for price policy formulation. However, on the basis of projected increase in the prices of purchased inputs, the cost of cultivation of these crops in major producting states for the year 1994-95 is likely to be higher by 6 to 8 per cent than that for 1993-94.

PRICE POLICY FOR THE 1994-95 SEASON : The Commission has already dealt with some important policy issues in the context of accelerating the growth of agricultural production in the country. Certain measures for creating a favourable price climate for the farmers have been discussed. The problems arising out of the changes in the fertilizer pricing policy have been brought out. An analysis of production

performance of different kharif crops, behaviour of output prices, changes in input prices and cost of production and movements in the terms of trade for the agricultural sector have also been discussed.The Commission has also made some important observations and recommendations.

There has been a marked acceleration in the growth of agricultural production during the last decade. Given the limited scope for expansion of area under cultivation, the growth of agricultural production in future would have to depend almost entirely on the improvement in yield. Acceleration in the growth of yield would require exploitation of realisable potential of the existing technologies for various crops, stepping up of the efforts for better utilisation of water resources and upgradation of technologies for both rainfed and irrigated areas. These apart, it would be important to maintain a favourable price climate for the farmers which would, inter-alia, require improving the performance of the domestic market for farm products and increasing the access of the farm sector to the international market. Though certain steps have already been taken to improve the performance of the domestic market, there are still some provisions like levy on rice, monopoly procurement of cotton in Maharashtra and statutory rationing in some areas of West Bengal which come in the way of efficient functioning of the domestic market.

As regards increasing the access of the farm sector to international market, it needs to be pointed out that there are a number of agricultural commodities in which the country has a compareative advantage and surpluses have started emerging. For increasing the export of such commodities, it would be desirable to develop the export markets which would, inter-alia, require a stable export policy for establishing the country as a reliable supplier in the international market. Dwelling upon these aspects, the Commission has made some specific recommendations in the earlier sections of this report.

An essential requirement for maintaining a favourable price climate for the farmers is the effective implementation of the price support policy and sustaining the prices at levels which would encourage the farmers to invest in yield raising infrastructure and modern inputs. In this connection, the Commission has drawn the attention of the government in this report as well as in its earlier reports to the repeated failures of the public agencies in providing effective price support to the farmers in all the areas. The Commission would like to emphasize the importance of effective price support operations in terms of the timing, magnitude and spatial spread.

While deciding upon the appropriate level of minimum support prices for the kharif crops of 1994-95 season, it needs to be borne in mind that the prices of many of the purchased inputs have gone up. It is also necessary to take note of the movements in the terms of trade for the farm sector. The index of prices received commodities sold by the agricultural sector increased by only 2.4 per cent during 1992-93 whereas the prices of the commodities purchased by the agricultural sector increased by 9.3 percent over that during the preceding year. As a result, there was a deterioration in the terms of trade for the agricultural sector during 1992-93. Though the provisional data available upto January, 1994 show a marginal improvement in the terms of trade during the current yeaer, it is important to note that after January, 1994, there has been an increase in the rate of inflation which has now rose to the double digit level.

Another aspect which has to be considered while deciding upon the level of MSP for various kharif crops is the inter crop price parity. In view of the continuing shift of some areas away from cereals in favour of oilseeds and other crops, the price policy would have to pay due attention to the maintenance of the relative prices of different crops at appropriate levels so that the production patterns that emerge are consistent with the requirements of the country.

Keeping in view the demand supply situation of different agricultural commodities, changes in the prices of farm inputs and cost of production, transportation cost, inter-crop price parity, movements in the terms of trade for the agricultural sector, rate of inflation in the economy and above all the need for accelerating the production of kharif crops, the Commission recommends that the minimum support prices for the kharif crops of the 1994-95 season be fixed at the following levels.

Commodity	Variety	Quality	Minimum support Price (Rs. per quintal)
Paddy	Common	FAQ	340
	Fine	"	360
	Superfine	"	380
Jowar	-	"	275
Bajra	-	"	275
Maize	-	"	285
Ragi	-	"	275
Tur (Arhar)	-	"	760
Moong	-	"	760
Urad	-	"	760
Ground-nut-in-Shell	-	"	860
Soyabean	Yellow	"	630
	Black	"	550
Sunflower seed	-	"	900
Cotton F-414/777		"	1000
	H-4	"	1200
VFC TOBACCO BLACK SOIL			
F_2 grade		"	1850
Light Soil			
L_2 grade		"	2100

The Commission further recommends that : (1) the prices for different varietal groups of rice for the purpose of levy be derived from the minimum support prices of the respective varieties of paddy on the basis of hulling/milling ratios as well as the processing and incidental charges obtaining in different states: (2) the prices of varieties other than those in the group of long and superior long cotton be fixed keeping in view the normal market price differentials between F-414/H-777 and other varieties: (3) The prices of varieties other than H-4 in the group of long and superior long cotton be fixed keeping in view the normal market price differentials between H-4 and other varieties: (4) the prices of grades other than F_2 VFC tobacco grown on black soils be fixed keeping in view the normal market price differentials between F_2 and other grades: (5) the prices of grades other than L_2 VFC tobacco grown on light soils be fixed keeping in views the normal market price differentials between L_2 and other grades: (6) components, pattern of assistance and requisite sanctions pertaining to various thrust programmes be communicated to the implementing agencies well in time: (7) (a) the scale of levy on rice millers/traders be reduced: (b) all the quantities of rice offered at the price derived from minimum support price for paddy be purchased by the public agencies: (8) other agencies and private trade be also allowed to purchase cotton from the farmers in Maharashtra: (9) the desirability of continuing with the statutory rationing system be examined by a committee consisting of representatives of the Ministries of Civil Supplies and Food, Department of Agriculture and Cooperation and the State Government: (10) as a part of the long term policy, atleast five lakh bales of raw cotton be allowed for export each year and in some years, if it becomes necessary to augment domestic availability, imports be encouraged: (11) having announced the minimum support price for a commodity, the public agencies be kept in readiness

to purchase all the quantities offered by the farmers at that price: and (12) the price support for coarse cereals be made effective and losses incurred on this account by the support agencies be reimbursed in full.

AGRICULTURAL PRODUCTION PERFORMANCE OF MAJOR CROPS : Agricultural production performance in the last four years together with the prospect of 1994-95 crop output is listed in Table 3.8. Trend in foodgrains production for the period 1982-83 to 1994-95.

TABLE 3.8

PRODUCTION OF PRINCIPAL CROPS *

Crop	1990-91	1991-92	1992-93 (Revised)	1993-94 Target	1993-94 Final	1994-95 Target	1994-95 Likely
			(MILLION TONNES)				
Rice	74.3	74.7	72.9	78.0	79.0	78.5	80.0
Wheat	55.1	55.7	57.2	58.5	59.1	58.5	58.5
Coarse Cereals	32.7	26.0	36.6	36.0	30.9	36.5	32.0
Pulses	14.3	12.0	12.8	15.5	13.1	15.5	14.5
Total Foodgrains	**176.4**	**168.4**	**179.5**	**188.0**	**182.1**	**189.0**	**185.0**
Kharif	99.4	91.6	101.5	105.5	99.4	106.3	101.8
Rabi	77.0	76.8	78.0	82.5	82.7	82.7	83.2
Oilseeds	18.6	18.6	20.1	21.0	21.5	22.0	21.5
Sugarcane	241.0	254.0	228.0	250.0	227.1	250.0	245.6
Cotton	9.8	9.7	11.4	12.5	10.7	12.5	11.6
Jute & Mesta	9.2	10.3	8.6	9.3	8.5	9.3	8.5
			(PERCENTAGE VARIATION IN PRODUCTION OVER THE PREVIOUS YEAR)				
Rice	1.0	0.5	-2.4		8.4		1.3
Wheat	10.4	1.1	2.7		3.3		-1.0
Coarse Cereals	-6.0	-20.5	40.8		-15.6		3.6
Pulses	10.9	-16.1	6.7		2.3		10.7
Total Foodgrains	**3.2**	**-4.5**	**6.6**		**1.4**		**1.6**
Kharif	-1.6	-7.8	10.8		-2.1		2.4
Rabi	10.0	-0.3	1.6		6.0		0.6
Oilseeds	10.1	0.0	8.1		7.0		0.0
Sugarcane	6.8	5.4	-10.2		-0.4		8.1
Cotton	-14.0	-1.0	17.5		-6.2		8.4
Jute & Mesta	10.8	12.0	-16.5		-1.2		0.0

1 Million bales of 170 Kg each
2 Million bales of 180 Kg each

Source : Economic Survey 1994-95, p. 121.

FOODGRAINS : Foodgrains production of 182 million tonnes in 1993-94 was higher (by over 1.4 per cent) over the previous year. Increase in production of foodgrains has been rather modest during the last three years. But in 1994-95, production is likely to be around 185 million tonnes, 3 million tonnes more than 1993-94.

RICE : Rice production exceeded the target of 78 million tonnes in 1993-94 to reach 79 million tonnes, up by 6 million tonnes over the preceding year. In 1994-95, there may be 1 million tonnes increase with total production expected to reach 80 million tonnes, again exceeding gthe target set for the year. Kharif 1994 was a good year for rice production.

WHEAT : Output of wsheat in 1993-94 reached 59.1 million tonnes, which was 3.3 per cent higher than 1992-93. During 1994-95, the prospect of production is quite good and expected production is 58.5 million tonnes, aqual to the target set for the year.

COARSE CEREALS : Bajra, jowar, raBi, barley and small millets constitute coarse cereals. Area under total coarse cereals was 34.4 milion hectares in 1992-93, which was 3 per cent higher than the previous year. Production of coarse cereals in 1993-94 is lowser than the previous year. Production of coarse cereals in 1993-94 is lower than the previous year and the likely production during 1994-95 is reported to be 32 million tonnes which would be highEr than previous year. Perhaps a good rainfall year causes more area to be diverted to higher value crops at the expense of area under coarse grains, ensuring at the same time higher yields per unit area under coarse cereals.

PULSES : Production of pulses in India has been stagnating around 10-14 million tonnes for the 30 years. Production fluctuates from year to year depending upon the behaviour of the monsoon. Having fluctuated between 10.9 million tonnes in 1987-88 to 12.8 million tonnes in 1992-

93, pulses production was 13.1 million tonnes in 1993-94 exhibiting an increase of about 2.3 per cent over 1992-93. Production in 1994-95 is anticipated at about 14.5 million tonnes,as against a target of 15.5 million tonnes.

GROWTH IN FOODGRAINS PRODUCTION : In the post green revolution period, beginning 1967-68, the annual growth in foodgrains production was 2.62 per cent, a little above the rate of population growth. In the more recent period (from 1980-81) the growth in rice production has significantly risen to match the growth rate in wheat production. The only setback in pulses, which continues to register lower growth rates (Table 3.9) and, as a consequence, per capita daily availability of pulses has come down from around 69 grams in 1961 to about 37.8 grams in 1994. A substantial step up in the production of pulses is necessary and should possible to achieve as the current yields are low. Sluggish growth in pulses production is mainly because of failure in evolving new high yielding varieties pulses. Some successful work has been done in arhar (tur), moong and gram, but its impact on enhancing supplies is not yet visible.

TABLE 3.9

ANNUAL GROWTH RATE IN PRODUCTION OF FOODGRAINS

(Percent)

Foodgrains	Compound growth rate [1]		Annual (year to year change)				
	1967-68 to 1992-93	1980-81 to 1992-93	1990 to 1991	1991 to 1992	1992 to 1993	1993 to 1994	1994 [2] to 1995
1	2	3	4	5	6	7	8
Rice	2.84	3.47	1.00	0.54	-2.41	8.37	1.27
Wheat	4.89	3.55	10.60	1.09	2.69	3.32	-1.02
Pulses	0.94	1.49	10.89	-16.09	6.67	2.34	10.69
Foodgrains	2.62	2.84	3.16	- 4.54	6.59	1.45	1.59

1 Based on index numbers, base triennium ending 1981-82 = 100
2 Provisonal

Economic Survey 1994-95 p. 122.

CHAPTER - I V

AGRICULTURAL PRICE POLICY VIEWS AND REVIEWS

C H A P T E R - IV

AGRICULTURAL PRICE POLICY - VIEWS AND REVIEWS

THE AGRICULTURAL PRICES COMMISSION (APC) : Both before and after Independence the Government of India had been constituting 'committees' and 'commissions' with fair regularity to investigate the 'food problem' and to suggest ways to solve it. But all these bodies were formed adhoc in response to periodic scarcity. The work and recommendations of these various bodies probably had no lasting impact on the agrarian economy of the country.[1]

It was only in 1965 that the permanent body, namely, the Arigcultural Prices Commission (APC) was set up, presumably, with longrun goals in view. The APC, like the Planning Commission (a national body concerned with growth and development in general), is only an advisory body, with all the decision-making power resting unquestionably with the government. The APC was charged with the responsibility of evolving a balanced and integrated price structure " in the perspective of the overall needs of the economy and with due regard to the interests of the producer and the consumer". The terms of reference of the Commission refer not only to the need for providing price incentives for promoting agricultural growth but also to the need to " ensure rational utilisation of land and other production resources." and to the " likely effect of the price policy on the rest of the economy, particularly on the cost of living, level of wages, industrial cost structure, etc."[2]

Wide-ranging as these terms of reference were, they were modified and expanded in 1980 in response to the changes in the agrarian economy, that had taken place during the late sixties and the seventies. An imprtant addition is the directive that price fixation should "take into account the changes in the terms of trade between agricultural and non-agricultural sectors." The original terms of reference did not cover any principle of pricing in relation to costs or parity between

sectors, barring a reference to marketing costs and margins. We shall discuss the specific political context of this directive later but note here that the underlying concern with agricultural input costs in relation to output prices, and, more generally with parities of different kinds, have been given further and explicit recognition in 1985 with the Commission being renamed as the Commission for Agricultural Costs and Prices (CACP).[3]

The composition of the Commission has undergone some change in character over the years. It was headed successively by several distinguished economists and originally composed of economists and civil servants with experience in matters relating to the working of the food economy in the country. However, in 1974 a member meant to protect the interests of the farmers was inducted to the Commission, with obvious implications for the evolution of policy.[4]

OBJECTIVES : The objectives as laid down in the terms of reference of the APC are to some extent conflicting, and difficult to realize for other reasons as well. One may thus say that the APC was given an impossible task. Let us elaborate.

(1) If the sole objective is to promote agricultural growth whether or not broad-base with respect to crops and regions through subsidies and price incentives, there is a clear possibility that the implied policy would hurt the interests of the buyers of food and agricultural raw materials. A resolution of the conflict of interests between producers and consumers, or between net sellers and net buyers, and between 'surplus' and 'deficit' areas, as some have described it in the case of foodgrains, thus becomes a necessary element of overall policy-making. It is a recognition of this necessity that is reflected in the expressed concern about the impact of policy on cost of living, etc., and has lead to the conversion of price policy into an approach which

seeks to integrate, in some measure, production objectives with those of distribution. In the case of foodgrains this meant that price policy had to be combined with the operations of a public distribution system (PDS) to ensure supply of foodgrains at subsidized prices to at least some of the poorer sections of the population. However, to the extent that subsidizing both the producer and consumer is severely limited by financial constraints, the policy cannot be sustained on either short-term or long-term basis without being supplemented by compensating measures of taxation. All this makes the design of price policy difficult, especially by body with no decision-making powers; more importantly, the difficulty can lead to politically expedient measures with exacerbate rather than resolve conflicts.

(2) The difficulty is compounded by two other obvious factors. Firstly, if relative prices are to play an efficient allocative role and not lead to undesirable cropping pattern shifts, policies must be designed to cover all the major crops on the country-wide basis, which is an impossible task to accomplish.[5] Secondly, since public distribution of subsidized foodgrains cannot meet the entire market demand (of both the rural and urban consumers), the impact of policies on market prices assumes importance. Thus, with the government handling only a fraction of the marketed surplus, the pricing objectives may ultimately be defeated by market forces. Therefore, the design of price polices with only a limited control over the market, which involves an appropriate combination of procurement, stock accumulation and depletion policies must necessarily be based on a sound knowledge of the implied working of dual markets. The biggest hindrance in this respect is not lack of knowledge about production trends and demand elasticities but our virtual ignorance of the operations of private traders at different tiers of the grain markets and their impact on prices.

(3) Finally, it must be noted the obectives are not only conflicting, they are also incomplete and imprecise in some respects (the fact that there is no indication in policy formulation whether it is only in the short run but also in the long run these confilicts could be left unresolved is also important). For example, income and price stabilization are common objectives of price policy; maintenance of some form of parity between the agricultural and industrial sectors and prevention of the erosion of purchasing power of agricultural income is a related concern, and all these are adequately discussed in the literature. Indeed they can be stated with some precision, unlike the vague 'protection' of the producers and the consumer 'interests'.

INSTRUMENTS : Given the all-embracing but vaguely set-out nature of the objectives of price policy, the APC had to recommend not one but several sets of prices; its recommendations had also to cover issues relating to the procurement and distribution of foodgrains by govermental agencies. It had to develop notions about 'support' prices to prevent distress, 'incentive' prices to promote investment and growth in agriculture, 'procurement' prices (posibly involving an element of tax) at which foodgrains could be procured by the governemnt under varying degress of compulsion (or none) and 'issue' prices (involving an element of subsidy) at which foodgrains could be distributed under the public distribution system whatever be its coverage.

The follwing discussion attempts to cover the different instruments of the poliy adopted by APC, more factually by the government, their rationale, and the manner in which they have worked in terms of the stated objectives.

SUPPORT AND INCENTIVE PRICES : Given large outputs fluctuations arising out of the vagaries of the monsoon (see section 4 below) and given the low price elasticity of demand for foodgrains in the country, prices

tend to fluctuate a lot from year to year : changes in the supply induce disproportionately large changes in the market prices.[7]

A notion of support price can be seen to acquire meaning in this context.[8] Such a price may be regarded as an offer price at which the government is willing to buy any amount of foodgrains from the farmers in years of good harvest when, in the absence of the support operation, the market price may falls below the cost of production; it has, therefore, to be above that hypothetical market price, and, for that reason, has a built-in element of subsidy to the producer. Some economists have argued, however, that support prices conceptualized in this manner need bear no relation to costs at least in the short run: as long as it is above the low market price that will be realized in the absence of intervention, there is an element of subsidy, and the government absorbs a part of the loss and neutralizes in some measure the effects of output fluctuations.

A logical corollary to the concept of the 'minimum' support price is that of a maximum or ceiling price the rationale for which lies in two factors.[9] Firstly, protecting farm incomes in years of abundance through purchases by the government at minimum prices implies building up of stocks; and for viability (at least over the long run) such a policy requires stock depletion as well. Secondly (this is a related factor), a maximum price would imply protection of consumer interests in years of crop failure; in years of normal crop, a support programme unilaterally favours the farmer and is clearly undesirable because the effects of agricultural output fluctuations in India are not restricted to the farm sector alone but are quickly transmitted to the other sector of the economy, especially in periods of scarcity, through high food prices. In a sense the food price acts as a base price in the determination of both agricultural and industrial costs.

We thus see that the two notions, one of price stabilization, or rather, price control within a certain range, and the other of support of farm incomes along with some degree of protection of non-farm interests are interrelated. This, however, still leaves some asymmetry, for the question remains whether in years of poor crop, corresponding to a disproportionate price rise, farmers and traders should be left free to sell all the surplus in the market to earn supernormal profits. Of course, the policy of stock depletion by the government tends to depress the market prices to some extent and holds these profits in check but it can be obviously more efficacious in combination with a policy of compulsory procurement at lower-than-market prices in lean years.

Thus the logic of a support price leads to the notion of a price range, especially in relation to the objective of dampening price and income fluctuations arising out of unpredictable monsoons. Supporting agriculture in this context is clearly different in nature in India from that, for example, in U.S.A., where it has more to do with the preservation of the purchasing power of farmers in relation to manufactured goods under conditions of abundant and growing farm supplies than with weather-induced fluctuations in farm output. U.S.A. has been able to pursue successfully this policy because of her dominance in the international grain markets.

In contrast to the support price, it is not easy to settle what constitues an incentive price. The rational of a price incentive lies in the promotion of growth. In the case of a single crop such as wheat hindsight enables us to cite this as an example a support price covering costs and some profit during a period of rapid growth in production is in effect an inventive price, with the governemnt standing by the lift surpluses and ensure profit margins irrespective

of output growth. Clearly such a policy cannot be adopted without undesirable consequences, including political tensions bound to arise because of the regional concentration of surpluses, except in the short run; on the other hand, a price incentive policy is not viable if the objectives is to promote a balanced growth with respect to all regions and crops because there are obvious limits to the provision of incentives.

It must also be noted that incentives need not cover output prices alone but may be extended to include subsidies in the supply of inputs and credit. It is possible to analyse the growth and welfare effects of the different underlying choices, but it is generally agreed that input price subsidization may be cheaper only in the very short run-an immediate increases in food and raw material prices being avoided; in the long run, with price adjustments taking place across the board, the effects may be similar to those of producer price subsidies.[10] More importantly, as it has been repeatedly stressed in the literature, the promotion of technological improvement through, for example, the development of irrigation, may at all times be a better alternative than the provision of price incentives to secure agricultural development. This belief is firmly grounded in the empirical finding the generally the elasticities of supply (in terms of output) with respect to such technological change variables as the irrigation ratio, exceed price elasticities: greater gains can be secured through upward shifts in the production function than from movements along the supply curve. In other words, if price policy is to be the only instrument for agricultural development, the low-supply response would require a tilting of the terms of trade in favour of agriculture to a degree the economy cannot bear except over a very short period.[11] Finally, given the uneven spatial distribution of irrigation and other resources, the scope for achieving desired levels of overall growth through even

marginal increases in per-hectare yields in the unirrigated tracts of the country (covering about two thirds of cultivated area) must indeed be enormous; the means for such a raising of the yields are without doubt technological in nature.

PROCUREMENT PRICES, COSTS OF PRODUCTION AND PARITY : Given the structure of the Indian economy and the decisive role of drought-induced agricultural output fluctuations within it, the operation of a support programme is inextricably linked with that of a public distribution system for the supply of foodgrains at subsidized prices. It is clear that a systme of subsidies at both ends (production and consumption) can be financially viable only if there are compensatory measures of taxation within the agricultural sector itself or elsewhere : subsidies beyond a certain quantum wihtout taxes will cripple the economy in the long run.

This leads to the concept of procurement as a tax on surplus producers especially in years of poor harvest when market prices and hence profit margins tend to be very high.[12] It is obvious that a degree of compulsion is inevitable if producers are to be made to surrender a part of the surplus at prices lower than those prevailing in the market. While both the support and procurement operations involve the government in the acquisition of stocks, they can thus be seen to be analytically quite distinct in character, one a mode of subsidiztion and the other a form of taxation.

This important analytical distinction was, however, lost sight of in the academic debates as well as policy implementation, aftr some initial consideration.[13] The reasons are many. Soon after the procurement and distribution programmes began to gather momentum by the late sixties, the procurement price emerged as a guarantee price, announced well ahead of harvest time, at which the government was committed to

make purchase. More decisive, of course, was the concern of the government to promote growth in the production of wheat through the new technology. All in all, the price guarantee scheme was a hasty response to a combination of several factors : the need to recover from an environment of shortages resulting from two consecutive years of severe drought (1965-67), the possiblity of such a recovery at a rapid rate through the cultivation of the newly emerging high yielding varieties and finally the purely localized and limited nature of the support operation, which made it eminently feasible. However, neither the subsequent emergence of surplus on a wider scale, nor the greater involvement of the government in the markets which it entailed, lead to any basic revision of the policy with regard to the rationale of procurement and its pricing.

The policy had predictable consequences. While the support operation was satisfactorily served by the levels of procurement prices whenever and wherever support was needed in response to bumper harvests, procurement of grain become increasingly difficult under conditions of scarcity, local or global. This meant that procurement prices had to remain close to, even if slightly below, market prices at all times. Since procurement prices were being announced in advance of the harvest and could be based at best on insufficient knowledge of the crop prospects and market conditions expected to prevail in the coming season, this in turn required the upward revision of prices (secured in practice through diverse means) for meeting procurement targets with varying degree of success. Section 4 discusses further details about price movements.[14]

Returning briefly to the question of compulsion which could have been the basis of procurement under conditions of relative scarcity, we may note that the government did employ a number of instruments incorporating a coercive element. These range from direct compulsory

levies on producers, traders and millers to the zoning or cordoning off supplies, to facilitate procurement. But the measures proved to be ephemeral in character and ineffective in execution, either because of the lack of 'political will' or of some other factors that could be held responsible for the failure of policy. Take for example, the constitution of zones comprising one or more regions. The usefulness of zoning has been much discussed in the literature. Let us note, however, that movement restrictions generally amplify the changes in prices in any region as they occur in response to variations in domestic production. Hence, to the extent that the normally surplus region can be kept immune to shortfalls occurring elsewhere in order to create conditions favourable to the procurement agency, zoning may be seen to be consistent with the principle of procurement below market prices in lean years. However, the net impact of zoning on prices, both in terms of the all-India average and the range of regional variation would crucially depend not only on the coverage of zoning but also on how much, where and at what prices grain is procured and subsequently distributed. In practice, movement restrictions have been imposed and relaxed in an arbitrary manner, sometimes in dissonance with the stated objectives.[15]

Let us now consider the relevance of costs of production to the fixation of prices. The general consensus is that minimum support prices, now indistinguishable from procurement prices, must fully cover the average cost of production, but the question what elements of cost should be included in the calculation of the average total cost continues, to be debated.[16] Specifically the debate refers to the appropriateness of the inclusion of not only the so-called paid-out costs but also the imputed values of the services of land and labour inputs by the family in the calculation of the 'complete' average cost. A price covering such a complete cost has been described as a 'forward-

looking' floor because it ensures cash incomes to farmers over and above the actual money expenditure incurred. Moreover, it is seen to incorporate at least one principle of parity, viz, input return parity, since the family inputs are given the same remuneration that they could notionally earn outside the family farming activity.[17]

Even if one accepts this complete cost principle of pricing, it is beset with many operational difficulties arising from the fact that even for a single crop the cost of production varies a lot not only from region to region but also within regions across different farms.[18] A solution suggested in this respect recommends the use of a bulk line cost, the minimum cost that covers the costs of farmers producing a major part of the output, weeding out the very 'inefficient' farmers. But then the derived price would cease to have the same meaning as that based on the average cost in standard economical theory. It is equally difficult to grapple with the question of regional variation in costs. The actual practice of fixing a uniform price for all regions is obviously defective. For example, the adoption of a price that covers the costs in the high cost region, where, say, traditional methods of cultivation are used, results in abnormal profits to farmers of other regions using the cost-reducing new technologies. Thus the principle may be consistent with the objective of growth but not with that of the reduction of interregional disparities.

Two important points have been made in relation to the imputation of values at market prices to the use of land and labour resources of the family. Since the price of produce is raised by the inclusion of these elements in the total cost, agricultural labourers and other net buyers of food for whom wages constitute a major element of income are likely to lose. The reason for this loss is that wages actually paid generally tend to be below the statutorily fixed minimum levels, which in principle could be in line with output prices fixed by the complete

costing principle. On the othere hand, employers of hired labour earn an abnormal profit for the same reason. In simpler terms, money incomes of net buyers (especially of wage earners in rural areas) generally lag behind food prices and the total cost principle reinforces the tendency. Regarding the imputation of market rental values to the use of owned land, it has been argued that there has been a continuous increase in these values arising from increasing productivity as well as demographic pressure. Regions well endowed with, say, public irrigation resources are also in general regions of high productivity and it is debatable whether such regions should be allowed to enjoy high economic rents through enhancement of product prices by inclusion of rental values in the total cost.

Similarly, it is agruable whether increases in rental values arising from exogenous factors such as demographic pressure or insufficient expansion of non-agricultural employment should be automatically transmitted as additional costs to the product price. Thus the debates in the literature demonstrate that even a well-defined cost-based principle for price fixation can become meaningful and reasonably operational only in relation to a clearly specified policy goal, such as the reduction of spatial disparaties in incomes earned from the cultivation of the same crop.

The parity with input costs in only one among different kinds of parity one can think of in the context of product pricing. For example, there is the parity between farm incomes and incomes earned in other sectors of the economy. A little reflection shows that in India, with large output fluctuations being the rule rather than the exception, it is difficult to maintain such a parity through a product pricing policy along : here again a system of subsidies and taxes is needed to limit the range of fluctuations in farm incomes and ensure their parity with incomes in other sectors. Also, because of the stickiness of nominal

wage incomes over the short period, product price adjustment can at best protect incomes from cultivation only. Thus, upward adjustments in agricultural prices made in response, for instance, to increase in the prices of some manufactured consumer articles may fail to maintain the purchasing power of all rural classes uniformly; wage earners may in fact suffer a loss in real income following the rise in the price of food because food absorbs most of their expenditure. A uniform output price consistent with the income parity criterion cannot be calculated simply because the commodity baskets of consumption vary as between the different rural classes.

THE POLITICAL FACTORS : Political faactors behind the making of economic policy are generally ignored in what may be described as 'mainstream' economics but constitute an important element of discussions of economic problems in the growing literature on Indian political economy. The general concern in the alternative stream is with production relations (such as those between landowners and labourers) and how they influence processes of change in the spheres of production and accumulation. However, the politics of price-fixing in the Indian context has received a lot of attention from both the camps.[19]

In the agraian economy, the importance of politics with respect to policy-making arises from two basic factors. Firstly, policies are formulated by governments at the State and the Union levels; the constitution and working of the government depend very much on the configuration of class forces. For example, the failure of land reforms for imposing ceilings on landholdings and for redistribution of land, despite much legislation and endless rhetoric in day-to-day politics and plan documents, cannot be explained without a consideration of the balance of class forces and the manner in which it influenced the implementation process. Secondly, and more readily seen, is the very large disparity in landholdings in all regions of India, with big

landowners constituting a small proportion of rural households but also, consequently, marketed surpluses.

Rural disparities have grown further with the introduction of the new agricultural technology which has strengthened the economic and political power of the class of surplus producers. Described as the rural oligarchy, this class has been appropriating a disproportionately large share of the benefits generated by the policy of incentives and subsidies to the agricultural sector since the late sixties. The political strength of the class in seen to lie, moreover, in its control over the rural vote in the electoral process, which enables it to further its own interest through bargaining with the other major ruling group, the industrial (urban) bourgeoisie. As a result, there is in existence a politically powerful 'farm lobby' which influences policy-making in agriculture with a fair degree of success.[20]

The success is derived from two factors. Firstly, given the nature of the electoral process and the decisive role of the rural vote in its outcome, there is a heavy representation of the 'farmer interest' in the State legislatures and governments. We should note that in reality the 'farmer interest' relates to the amassing of incomes and wealth by the surplus-producing big farmers, although the political rhetoric refers always to the 'peasant cause' in general, as if the peasantry constitutes ia undifferentiated mass; small, poor farmers and agricultural labourers have hardly any representation in any tier of the decision-making process. Secondly practically all political parties accord support to the 'peasant cause' and to rural agitations on a variety of issues such as demands for 'remunerative' prices for the products of agriculture, for provision of inputs like water and electricity, and credit at cheap rates, for cancellation of rural debt in hard times, and in general for all-round support at all times.

For most political parties, slogans about the rural poor are a necessary means to secure political power through the electoral process. The basis of leftist support for the farmer's interest has, however, another dimension. The communist parties, for instance, recognise landlords and capitalist farmers as constituting an exploiting class but seek to mobilize not only poor peasants and labourers but also the middle and richer sections of the peasantry in order to secure peasant unity considered necessary to carry forward the struggle against exploting classes in general. These parties recognize the fact that the benefits for increses in agricultural prices flow in a disproprtionately large manner, if not wholly, to the surplus-producing big farmers. They, therefore, suggest measures of taxation on the rich and for relief for the poor to counteract the growth in inequality that price increases entail. Nevertheless, they support the struggles for 'remunerative prices' perhaps becuase of their commitment to securing peasant unity from a long-term perspective.[21]

The course of events relevant to foodgrain price policy since the mid-sixties can now be described in brief. The heralding of the 'Green Revolution' with the introduction of new seed varieties of wheat and the unequivocal commitement of the central government to the agricultural strategy led to the support of wheat prices at levels prevailing during 1966 and 1967, a period of extreme scarcity, without any reference to principles of cost or parity or to the demand and supply conditions in a period of abundance resulting from the wheat surpluse in the north-west. The sole aim was to promote growth at any cost. During this period policy-making was wholly the prerogative of the Chief Ministers of the surplus States. Such, attempts as were made by the APC to introduce some principles into the setting of relative prices and procurement targets proved to be futile.

The most important concern of the farm lobby till about 1973 appears to be the prevention of a fall in the price of wheat which the bumper harvests of 1968-1972 would have normally brought about. It must be noted in this context that during this period rice surpluses and quantities procured were marginal; further, some cost comparisons shows that the margins of the procurement prices over the costs of production were far higher in the case of wheat than in those of rice (see section 4 below). The parity between rice and wheat seems to have been established only from about the mid-seventies,[22] following both the greater quantum of rice being procured and the conditions of relative scarcity prevailing in 1973 and 1974.

At any rate, the terms of trade moved generally in favour of agriculture during 1965-1973. The trend has reversed since then, with the prices of manufacutred articles and agricultural inputs rising at rapid rates and stocks of foodgrains piling up with the government as a consequence of succession of good harvests. This adverse movement in the terms of trade is the background of numerous farmers' agitations for remunerative prices. An incidental factor behind the struggles is the emergence in 1977 of peasant leaders such as Charan Singh at the national level. The eighties saw not only a reconstitution of the APC to allow for explicit representation of the farmer interest but also to its renaming as the Commission of Agricultural Costs and Prices, enshrining the cost principle in price-fixing. The farm lobby has in recent years been growing further with the mushrooming of self-styled 'non-party' 'peasant' organizations such as the one led by Sharad Joshi. The rhetoric of Joshi's movement referes to the exploitation of agriculture (Bharat) by Industry (India) and the goals may, therefore, look broad-based but the programme has been aptly described as a one-point programme for securing higher agricultural prices in all seasons.[23]

PRICE MOVEMENTS AND RELATIONS GROWTH AND FLUCTUATIONS IN OUTPUT : In per capita terms the output of foodgrains in India as a whole has stagnated since the beginning of the sixties, implying thereby the growth rate in foodgrain production just about equalled that of population.[24] However, different crops exhibit different trends; for example, there has been an impressive increase in the output of wheat but a distinct decline in that of coarse cereals and pulses (both in per capita terms). The impact of these differential trends on relative price movements as well as consumption levels, espceially of the poor, has still to be studied in detail.

But more important perhaps is the fact at the specific crop level and in the aggregate there have been considerable year to year fluctuations in yield per acre as well as production. Since the production of foodgrains as a whole has stagnated in per capita terms, output fluctuations are clearly relevant to price movements in a period charactrized by the growth, albeit modest, in real incomes per capita. Some early studies show that the price flexibility coefficient, i.e., the elasticity of price with respect to the per capita availablity tends by very high (more than two in absolute value) for cereals such as rice and wheat.[25] Of course, availablity is not determined by levels of production alone: the operations of the government (through imports and distribution) and of farmers holding surpluses and traders at the different tiers in the market economy are equally relevant. A good part of the price flexibility may be due to the speculative activities of the traders (Singular absent in studies of price trends), but output fluctuations contribute also to the quantum of grain that could be procured by the government at given prices, to amounts that have to be distributed through the public distribution system etc., and thus are of central importance to the interaction of private and public agencies in the foodgrain economy, i.e., the dual market economy.

From this perspective, the recently well-documented increase in fluctuations (with much inter-regional and inter-crop variation) in productivity and production of foodgrains in the period subsequent to the 'Green Revolution' assumes importance[26] but is not adequately reflected in policy-making with reference to pricing, building up of stocks and distribution. The studies which demonstrate this increase in instability arge that the improved technologies are not responsible per se for this trend in variances and point to a number of concomitant factors such as the sub-opitmal use of irrigation and fertilizers, simultaneous increases in year-to-year variability in areas sown as well as an increase in the co-variance between yields obtained and areas sown and so on. All this requires more detailed study at a greater level of disaggregation with respect to both crops and regions than has been attempted in the literature so far. A recent study on output fluctuations comes to the conclusion that "aggregate production instability is an inevitable consequence of rapid agriculturl growth and there is little that can be effectively done about it" and suggests that policies addressed to the stabilization of consumption through storage and trade policies may be more promising.[27] This conclusion is, however, contestable because an broad-based strategy for the improvement of yields and stability in output in the dry and rain-fed tracts of the country is a clear alternative, admittedly not yet spelt out in detail on the basis of existing knowledge.

The supply of grain is more relevant to price movements than is domestic production. If one takes net production augmented by changes in stocks with the government as a first approximation to supply (designated usually as availability), this variable exhibits characterstics similar to those of production: since the early sixties net availability of foodgrains in per capita terms has virtually stagnated, but year-to-year fluctuations have been fairly wide,

although distinctly less wide than in output, with the government distributing somewhat higher amounts in years of crop failure.[28] The good harvests of the late seventies and early eithties have been utilized more for stock-building than for improving levels of availability. Indeed, levels of stocks which were about 3 million tonnes in the early seventies grew to approxiately 30 million tonnes by 1985 (more on this later). The fulctuation in actual availability approxmations indicate, because of the possible speculative hoarding by the private trade.

MARKET PRICES, PROCUREMENT PRICES AND COSTS: In this and the following subsections we shall discuss the working of the dual markets in the foodgrain sector, especially in relation to the period after the mid-sixties marked by a significant intervention by governmental agencies in the market. Apart from procurement and distibution of certain quantities of grain at set prices, the government was involved also in stock-building operations. This is the basis for dual market models which seek to capture the interaction between the operations of the government and the functioning of the open market.[29] It must be noted, however, that a realistic formulation of such models in their fullest complexity is not an easy taks, for it would require, apart from the specification of supply and demand functions under the duel price structure, and explicit consideration of the role of exogenous output fluctuations and of the complexity introduced by different policy instruments such as zoning and stock pilling. Perhaps, it is for this reason that most available analytical models are addressed to narrowly focussed issues such as the impact of price and other instruments on levels of procurement.

Let us begin with a descriptive account of the trends in prices and costs. Although procurement prices have generally been lower than market prices, both series exhibit a strong upward trend since 1960-61, characterized, in the case of foodgrains as a whole in India, by a

clearly visible staircase type of movement, with prices rising significantly in years of good harvest. The only exceptions to this type of movement (with prices declining in response to good crops) were in 1968-69, following the initial spurt in wheat production, and in 1975-76, the period of Emergency and all round 'discipline'.[30]

Two factors appear to underline this type of price behaviour: firstly, weather-induced output fluctuations (especially in per capita terms) of a wide order, combined with high price flexibility coefficients; and secondly, the bounty of good harvests being used more for stock-building than for price reduction. The asymmetry between the protection of producer interests through price support, inherent in withholding supplies in good years, and the protection of consumers is perhaps most clearly seen in this aspect of government operations. (The question of optimal level of stocks is discussed in subsecion 'Analytical Issues' below).

It must be added, however, that the nature of both the trends in prices and the order relations between procurement and market prices, protrayed above in the case of foodgrains as whole for all-India, may not hold uniformly across regions and crops.

Turning now to a comparison between procurement prices and costs to see whether procurement has operated as a disincentive to production. Let us recall that the comparison is best with difficulties arising from the conceptualization of cost (section 2). Studies in this reqard rely on the average cost at the State level (estimated on the basis of sample surveys) with cost C as the relevant concept. This cost includes the imputed value of family labour as well as the imputed rental value of owned land. The conclusion are that in the case of wheat, since the eary years of 'Green Revolution,' procurement prices have been higher (well above, in the initial part of this period) than costs of

production and in some years close to the open market prices. For rice, until the mid-seventies support prices did not cover costs in West Bangal and the Southern States but they did in the case of northern States. Thereafter, however, procurement prices of rice have been raised substantially so as to cover cost uniformly in all the producing regions.[31]

It is possible to argue that uniform purchase prices (generally fixed in relation to costs prevailing in the high-cost region) are likely to have promoted inter-regional inequalities because of the wide variation in costs (however defined). For example in 1978-79, while the cost per hectare for paddy was higher in Punjab than in Andhra Pradesh (by about 11 per cent), the cost per quintal of paddy was lower (by about 22 per cent) because of the higher yields per unit area and more favourable condition for the cultivation of high-yielding paddy varieties in Punjab.[32] It must be noted in this context that the Pubjab region paddy is produced almost exclusively as a commercial crop and the region contributes significantly to the rice procured by the government.

To the extent that farmers are fee to sell in the open market, prices received by farmers (a weighted average of procurement and market prices, with the relevant quantities as weights) are more relevant than procurement prices alone to making a judgement about disincentives. At a hypotetical but more sophisticated level one might compare costs with the prices that would have ruled in the open market in the absence of purchase and distribution by the government. The determination of such prices would require a properly specified supply-demand-prices model but crude calculations can be done on the basis of available demand elasticities and price flexibility coefficents under the assumption that output levels are exogenously given. At any rate, the few studies involving such price-cost comparisons, show once again that procurement prices have in general been 'remunerative' in relation to cost.[33]

As noted before, the parity in relation to cost in only one among the different kinds of parity which can form the basis for price fixation. Although the APC has from time to time taken into account, apart from costs of production, prices of specific inputs such as fertilizers or the general price level in the price fixation process, presumably in conformity with some principle of parity, it is difficult to discern from data the working of any particular parity principle (such as that between crops, between input and output prices, or between prices paid and received)possibly because of the arbitrary manner in which elements relevant to different types of parity have in parctice entered price fixing in different combinations over the years.[34]

The arbitrarines has made it easy for those who argue for price increases to invoke this or that principle of parity as the occasion demands. For example, if the prices of fertilizers are raised by the government, that alone is sufficient to ensure political mobilization in favour of the demand for remunerative prices regardless of the total cost of production or market conditions. If the following season the price of fertilizers are reduced but the general price level rises (for whatever reason), the basis for the demand for price increases may change; for instance, it may shift to the cost of living or the real income of poor farmers. The point is important because of the differential trends in prices of commodities covering different crops, agricultural inputs and articles of consumption. It is easily illustrated: the demands for high support (procurement) prices of what were based on an appeal to the level and change in market prices till the mid-seventies but later, with the prices of some inputs and manufactured articles increasing in general at rates faster than those of agricultural commodities (including wheat), slogans for political mobilization began to be centred more and more around input prices and costs. It will be interesting to analyse in this light the shifting

ground of the farm lobby in response to the changing economic environment.

At a different level, among the academics, questions relating to the terms of trade (TOT) between agriculture and industry have received much attention.[35] They include question about the relevance of TOT to price policy and mobilization of rural surpluses in the specific Indian context as well as those relating to the actual movements of relative prices. In contrast to the first set of these questions, the second has generated much controversy in the literature. This is probably a fall-out of the political process in which slogan based on relative prices have as remarked before, assumed much significance. In any case, the shift in the focus is unfortunate because what is relevant to policy, making concerned with wellfare is not so much the actual movement in the net barter TOT as its impact on aggregate farm output, farm incomes and their distribution. It must be pointed out in this context that generally the supply response is low and, therefore, the question to what extent agricultural growth can be stimulated through changes in TOT brought about by policies with a limited coverage of crops and regions becomes crucial to our understanding of such policies.

The picture of actual movements in the ToT (whether in net barter or in net income terms) depends on how the relevant indices are constructed, the commodity compositions taken, the weights assigned, the price data employed, the base year chosen and so on. Indeed, the studies in this area demonstrate, if anything at all, that constructed series are extremely sensitive to methods of construction, yielding as they do sometimes opposing conclusion about the direction in the movements. A continuation of this debate can be fruitful only if this sensitivity is examined more closely and in relation to the impact of the TOT on the different aspects of the farm sector.

IMPORTS AND STOCKS : One of the objectives underlying the promotion of high-yielding varieties and the new technology was the attainment of self-sufficiency in foodgrain production, i.e., a drastic reduction on the dependence on imports. Indeed, the role of imports in maintaining supplies has become insignificant from about the mid-seventies.

Both imports and internal procurement enable the government to build up stocks needed to maintain supplies at given levels and stablize the prices, i.e., to curb price movements arising out of the output fluctations characterizing Indian agriculture. Two questions arise in this context : the first about the optimal level of stocks to be held by the government and the second relating to the possiblity of choice between imports and domestic procurement for the purpose and the conditions governing such a choice. It is obvious that for meaningful analysis the questions have to be set within a framework that includes not only the dual domestic markets but also the international market for foodgrains.

Let us begin with a brief review of the facts. There were broadly two phases, covering 1968-1972 and 1975-1985, during which stocks held by the government were allowed to increase, from 2 to 8 millioin tonnes during the first and from 8 to roughly 30 million tonnes during the second phase, respectively. Both these phases covered strings of good harvest, with peak and record levels of per capital production during the early eighties. While both imports and procurement contributed to this stock-piling during the first phase it was almost wholly the internal effort that enabled the government to accumulate stocks during the second phase (the droughts of 1986 and 1987 led to deletion of stocks). As noted before, the government has generally been releasing somewhat larger amounts, in per capital terms, for distribution through the PDS under distress conditions, but these amounts have only

marginally augmented the fluctuating production levels. Generally, the levels in per capita availability have fluctuated along with those in production, although the year-to-year variations were smaller in the former. It is clear that the government's stock management has not been successful in brining about a stability in supplies, a fact readily seen from the low levels of per capita net availability in years such as 1975 and 1980, corresponding to poor harvests (406 and 410 g. per day respectively, in contrast to an average of 447 g. over the whole period 1961-1984). More importantly, the precedence accorded to the policy of accumulation of stocks over that of depletion in adequate amounts led to the expected price changes: large increases in years of crop failure and moderate changes during time of good harvest following the use of procured grain for accumulating stocks to prevent prices falling. It can be seen thus the stock management policy of the government has contributed in some measure to the inflation in foodgrain prices and to the disadvantage of consumers.[36]

The question of optinal level of stocks assumes importance in this context.[37] The gross output of foodgrains per capita per day has over the period 1961-1984 stagnated around an average of 494 g. with a coefficient of variation of 8 per cent (the computation includes the worst ever years: 1966 and 1967). This means that actual output levels in any year are unlikely to deviate from 494 g. by more than 12.8 per cent, i.e., 63 g. per capita per day (1.6 times the standard deviation corresponding to a 5 per cent chance for larger deviations, under the assumption of a normal distribution). For a population for 800 million this corresponds to a predictable shortfall not exceeding 18.4 million tonnes (with a probability of 95 per cent) in a single year. The technical committees constituted by the geoverment during the sixties and seventies recommended buffer stocks in the range of 10 to 15

million tonnes (for lower levels of total population) on a basis of probability calculation similar to the one above.[38]

An insurance cover against two consecutive poor harvests would of course require a much larger buffer stock but the policy is likely to be extremely costly and economically crippling. In any case, it is difficult to argue in favour of a stockholding in excess of 20 million tonnes at the current population level, especially if the possibility of imports (during a second consecutive year of poor crops) is kept in mind. Indeed, some studies show that the government's stock policies have been sub-optimal in many ways: they demonstrate that higher levels of per capita supplies than in the past could be maintained with appropriately designed and coherent policies for fixing prices, accumulating and depleting stocks, determining import levels and so on.

Above all, if the range of price variation is to be limited so as to benefit both producers and consumers, any sensible policy must include the depletion of stocks in adequate amounts when necessary as well as accumulation to the desired extent. The point is important becuause the increase in inventories beyond optimal levels not only imposes a crippling burden on the economy but is also regressive in character. For example, the so-called food subsidy, mounting and accounting for a big proportion in the budget deficits of the central government in recent years and usually interpreted as a subsidy to the poor covered by the PDS, includes the costs of holding stock. It can be argued that the poor would be better off it prices are allowed to decling in response to good harvests especially when the stocks held by the government are already adequate to meet contingencies such as drought. Accumulaton of stocks beyond the level needed to cover contingencies benefit the surplus producers only at the cost of the consumers, especially the rural poor who have no access to the PDS.

ANALYTICAL ISSUES : The highly correlated movements in costs, procurement prices and market pries, both contemporaneously and with lags in the variables, are not very revealing in terms of the impact of state intervantion in foodgrain markets. Given the limited coverage of government operations, with respect to crops and regions on the one hand and quantities procured and distributed on the other, it would appear prima facie that the impact of these operations, for example on market prices, would also be limited with regard to regions and crops. On this understanding, the impact of operations in the wheat market would be limited to regions in the north-west where the procurement effort is concentrated and the regions (mainly large urban areas) where subsidized wheat is distributed in large enough quantities to influence the open market pries. This is questionable, however, because to an unknown extent the markets for different cereals are integrated, with demand, supply and price conditions in the market for one cereal influencing those in the markets for otehr cereals. The explanation for a strong correlation between market prices and support prices in the case of foodgrains and a whole may lie in such an integration, not addressed adequately in the literaure. Our ignorance in this respect is attributable in part not only to the lack of the relevant data, for example, on prices in the rural areas of both the 'surplus' and 'deficit' regions, but also to the absence of requiste analyses of issues as, how prices of inferior cereals are influenced (in the different regions of the country) by those of rice and wheat and of trends in the regional dispersion in price levels and so on.

In contrast, the phenomenon of increases in market prices leading, with some lags, to increases in procurement and issue prices, analysed in some detail is perhaps easier to understand. In general a rise in foodgrain prices can be expected to lead to rise in wage costs, albeit, with time lags in adjustment. More importantly, the burden imposed on

the government by its own operations in the foodrain markets, is relieved in practice, although only in part, through increases in the so-called administered prices (such as fertilizer prices), and these increases have a direct bearing on the movement of agricultural costs. Finally, increases in costs of production lead to pressure on the government through the political process to raise support prices. Observed correlations between procurement prices and lagged market prices (and costs) notwithstanding, the chain of causation in this respect requires further study, on the support of available documentation, on the disposal of subsidies and the budgetary transactions of the central government.

In sum, the elaboration of the means for achieving some form of inter-crop parity and reducing inter-regional disparities in prices, in consistence with a set of well-defined welfare goals, remains elusive in Indian economic literature.

NET IMPACT : What is the net impact of foodgrain price policy on the economy in general, on the processes of inflation, investment, growth and distribution and more particularly on growth rates in agricultural production, the levels of prices and consumption of foodgrains of different types in the different parts of the country ?

The question cannot be answered easily, and not merely because it encompasses many interrelated issues. There other reasons are pertinent : Firstly, the quantitative significance of the limited nature of state intervention in the foodgrain markets is still to be assessed in meaningful analytical terms (for instance, we know practically nothing in this context about rural-urban price differentials). Secondly, while there is no doubt that relative prices, irrespective of the extent to which they have been influenced by actually implemented price policies, have played a significant role in shaping the economy, it is necessary

to take into account the working of taxes and subsidies of different kinds for understanding this role. And thirdly, there is a need to incorporate into the analysis the experience with non-price instruments such as direct public investments in irrigation development, etc. In the following subsections we have covered a limited ground only.

OUTPUT : Numerous studies deal with supply response grist to the Agricultural Economics mill.[40] Barring a few exceptions, they are concerned with the response in terms of the allocation of areas to different competing crops corresponding to relative prices and profitability. These seek to demonstrate, in general, that the Indian farmer is a rational economic animal. The exception consider also the response in terms of the increase in input use, especially of modern inputs such as fertilizers, relevant to the generation of higher profits through increases in the productivity per unit of land area. We thus have some plausible estimates of the overall output response, combining both the area and input responses. The long-run elasticity of output with respect to the lagged output-input price ratio is in the range of 0.4 to 0.6 for the major cereals : rice and wheat, and the supply response, reckoned thus, is lower than the response of output to increase in the levels of irrigations.[41] These estimates based on past data summarize the Indian exprience in some fashion and show therefore that agricultural growth has been promoted more by the development of irrigation than by the price factor.

This is not to deny the very significant role that support prices and subsidies (and hence the terms of trade) have played in the promotion of agricultural growth in certain areas of the country. In general, only some crops and some region have benefitted from the mix of policies (pricing, fiscal and other) and this has promoted both inter-crop differences in growth and inter-regional inequalities in

agricultural performance. The impressive growth in the production of superior cereals has brought about to some extent through shifts in the cropping pattern away from inferior cereals and pulses, and in some areas at the expense of commercial crops too. These shifts have been made possible by the policy-mix referred to earlier. In the overall, a substantial part the increment in production associated with the new technology has originated in five or six advanced States with the eastern region and semi-arid parts of the county performing poorly. Both price policies and the esay availability of subsidized funds have promoted these developments.[42]

INCOME DISTRIBUTION AND POVERTY : The excerbation of inter-regional inequalities in foodgrains production and the decline in per capita production of interior cereals and pulses are strongly suggestive of a general widening of disparities in income and consumption. Let us consider in brief some relevant analytical factors. Procurement prices, farm harvest prices ans wholesale market prices are all relevant to the determination of the price producers receive for their surplus crop output. In general and in the simplest case, price increases are regressive in their impact on the income distribution among the producers because the bigger producers account for the lion's share in the marketed price of the output and therefore appropriate the gains, if any, accruing from a price rise, in a larger proportion than do the small farmers. Of further relevance in this context is the fact that small farmers and agricultural labourers are in general net buyers of foodgrains in contrast to the big farmers who are net sellers, so that by virtue of their capacity for retention in full measure of grain for home consumption the latter are not hurt by the rise in market prices. Likewise, the seasonal movements in prices, especially in years of poor harvest, have a regressive impact since the poor as net buyers may depend wholly on market perchases in the lean season when prices tend to be higher.

However, for a more complete assessment of the impact of price increases on income distribution it will be necessary to take into account incomes earned through non-farm activities by wage earners and small farmers. In the absence of detailed research of this type, some analysts have sought to directly relate estimated provety levels to changing relative prices to see, for example, whether rising food prices hurt the interests of the poor. This effort has also led to some controversy because the same data sets analysed in different way produce contradictory results. The underlying methodological difficulties have received much attention in the recent literature.[43]

But it is difficult to contest some relevant empirical findings. It has been demonstrated convincingly that poverty ratios (the proportion of people below the so-called poverty line) exhibit fluctuations with no discernible trend-positive or negative.[44] The variations in the ratio are, however, correlated enough to attract much academic attention, to both real income (inversely) and food prices (directly), suggesting thereby that while agricultural growth contributes to a reduction in proverty, rising food prices may act independently of levels of output and lead to decrease in the consumption of food and hence to higher levels of poverty.

Regional disparities assume importance in this context. Interstate differences in the per capita production of foodgrains have widened. But through its operations of procuring grain from the pockets of surplus and distributing it through the PDS the government has ensured that regional disparities in terms of availability have not increased since the mid-sixties. However, except in Kerala and Gujrat (and more recently Tamil Nadu and Andhra Pradesh) the PDS hardly covers the rural areas. An early study dealing with inter-state differences in food intake, covering both the rural and urban parts, is relevant in this

context.[45] It has suggested that given the magnitudes of regional disparities in incomes and prices, the markets work in such a way that a part of the surplus tends to remain in the surplus producing regions and deficits left uncovered in other regions. A reason could be that the rural areas in the deficit regions do not attract market supplies, given the range of price differences and the organzation of markets. Therefore, the implied lack of adequate price-quantity adjustments through market forces has generally a greater impact on rural than on urban consumption levels. Of course, the public distribution system reinforces this tendency so that generally while the urban poor are ensured of supplies at given levels, the rural poor eat better only if the local harvest is good.

CONCLUDING REMARKS : Price policy refers to the doings of the government, but prices are not determined by policies alone; the markets play a part and so do some non-market factors unrelated to policy. It is not easy then to unscramble observed price trends in relation to the different aspects of the economy to arrive at unambiguous judgements about the correctness or otherwise of this or that policy. Relatively high and rising agricultural prices favour surplus-producing big farmers and may indeed be necessary to promote agricultural growth at a satisfactory rate. But they have adverse effects on the costs and standards of living of the rural and the urban poor, and on a wider stretch, as some economists have argued convincingly,[47] may also lead to industrial stagnation.

The subject remains controversial and the debate on each specific underlying question is unresolved despite the participation in the debate of several eminent economists and political leaders. To some extent there is in all this a loss of perspective resulting from scholarly affinity to hair-splitting. But it has led to a polarization of sorts.

One school denounces 'cheap food' policies and argues for price-support programmes that give adequate incentives to stimulate supply. On the other hand, it can be argued that aggreagate supply response is low, and that, more importantly, price-support programmes imply high private and social costs; so price in incentives fundamentally result in income transfers to the large farmers. Consequently, a well-balanced package of government insturments including promotion of technology, infraturcture investments and production subsidies is preferable to a reliance on the price instrument alone. The literature suggests that public investment, say, irrigation is better than the provision of price incentives for not only promoting groth but also for 'cost-efficiency' and distributing gains for growth uniformly across the different social and economic classes in India.[47]

These conclusions emerge in part from some well-known facts : agricultural growth has remained fairly stable since Independence at about 3 per cent per annum; the rates of growth in foodgrain production have been somewhat lower and there is no evidence of an improvement in the levels of consumption; the 'Green Revolution' has exacerbated interregionl inequalities in the production of foodgrains, productivity increases having been largely confined to wheat in the north-west. Further, the public distribution system (PDS) restricted mainly to the urban areas, has failed to protect the rural poor; and the social costs of public intervention in this sector, including direct subsidies to agriculture and those involved in the operation of the PDS have been heavy and rising. The point is that these subsidies cut into the resources meant for development expenditure, apart from increasing rural-urban inequity since the vast mass of the rural poor are denied access to the PDS.

But the conclusions have been, and continue to be disputed. In some measure the controversies arise from the fact that while the issue can

be stated in fairly simple terms (such as, whether price policy has contributed to agricultural growth), they cannot be satisfactorily resolved (through, for example, a regression of production on some price variable to measure the supply response) becaue of the complexity of the structure of economic and social relations within which the questions have to be addressed for a meaningful analysis.[48]

NOTES AND REFERENCES

1. Apart from these bodies, the Americans have also contributed to our wisdom about the food problem. The Ford Foundation compiled a report in 1959 entitled : India's Food Crisis and Steps to Meet it. For details see Chopra (1981).

2. The terms of reference are reprinted in the Appendix to the Report of APC on the Price Policy for Kharif Cereals, 1965-66, p.47. For some discussion of these terms see Kahlon and Tyagi (1983).

3. The revised terms of reference are contained in the Government of India, (Ministry of Agriculture) Notification No. 14011/2/78, dated March 5, 1980.

4. de Janvry and Subbarao (1986), p.17. They add that there is no representation for consumers on the Commission. The Commission reconstituted in May 1988 has three farmers as members.

5. Raj Krishna, who was closely associated with the APC, had written : " A price support program is unavoidably a disequilibrium programme. The case for it is only that, if effective, it may convert a disequilibrium of shortages into a disequilibrium of supplies in the markets for selected commodities."-Krishna (1967), p. 525. Emphasis added.

6. It must be noted that there are two kinds of distress. Small farmers sell a part of their output, sometimes at a price disadvantage, although they may in general be net buyers for grain. This form of distress is clearly distinct from farmers, big and small, having to sell at low prices arising from bumper harvests. An appreciation of this distinction is absent in discussion on support prices.

7. The price flexibility coefficient, i.e., the elasticity of price with respect to availability has been estiated at - 2.38 for foodgrains as a whole and 2.24 for cereals. See Ray (1972) for details. Earlier contributions in this respect are those of Thamaraiakshi (1970a and 1979b). These also demonstrate high price-flexibility coefficients for rice and wheat.

8. The principles for price fixation by the government for this limited intervention in foodgrain markets have been discussed threadbare in the literature published since the mid-sixties. Some relevant references are : Dandekar (1965),Dantwala (1967), Krishna (1967 and 1982) and Thamarajakshi (1977) . Attempts to sum up the debates have been made, for example, in Kahlon and Tyagi (1983), Subbarao (n.d.) and Rath (1985). No such attempt is made in the following text. It should be noted however, that much of the literature is concerned with the efficacy of stimulating growth through price incentives. Issues relating to distribution are addressed somewhat tangentially.

9. Dandekar (1965)

10. Krishna (1967), pp. 526-27.

11. Assuming a realistic estimate of 0.4 for the long-run elasticity of output with respect to the terms of trade, Raj Krishna says : ".... 16 per cent growth over five years [in output] would require a one-shot 40 per cent increase in the real terms of trade of agriculture. This is equivalent to 7 per cent annual increase over this period which will also, of course, spread out the resulting growth. This order of terms-of-trade increase is hardly a practical proposition, even of terms-of-trade increase is hardly a prictical proposition, even assuming that a government can fix term of trade." In the sequel, he concludes "... a unit percentage change in the important shifter variable (technology) will yield much greater growth than a unit percentage price shift."--- Krishna (1982), pp. 235-36.

12. Procurement as a tax on farm produce has a long history in the development phase of many countries. This has a bearing on the larger issue (not treated in this survey) of using surpluses from the farm sector to promote industrialization. See in this context Krishna (1982) and Mitra (1979).

However, in India this has a narrower, more immediate context as recognized, for example, by the APC itself. An early APC report says : "It should be a social obligation on the part of cultivators to surrender a portion of the produce to the State in the wider national interest.... While direct taxation involves no quid pro quo, in the case of procurement the transactions would still be in the nature of buying and selling and the producers would receive a price, even though this price may be lower than the prevailing market price. The case for such an impost becomes particularly strong in view of the extremely light incidence of agricultural taxation in the country."--Report of the APC on Price Policy for Kharif Cereals (Procurement Prices) for 1967-68 Session, Sep. 1967, p. 5.

13. See Krishnaji (1973) and Nadkarni (1987), p. 203.

14. The prices fixed by the State Government were generally higher than those recommended by the APC and the Central Government. A study making a detailed demonstration of this fact says. ''The phenomenon of States fixing prices higher than the recommended prices is explained by the influence exercised by farmer interests on policy at the State level. But it is also due to the realistic economic reasoning that the procurement targets recommended by the Centre could not be realized with unattractive purchase prices, especially in bad crop years. " - Krishna and Raychaudhuri (1980) p. 4.

15. Subbarao (1978a) summing up the literature on zoning says : " That food zones actually accentuated regional price differences is an empirically well-established fact." However, there is some evidence which indicates that the relaxation of zoning in the north-west during the initial spurt of wheat production is a response to the fear that prices would fall impede growth in that region (Krishnaji 1973).

16. Subbarao (n.d.) See also Kahlon and Tyai (1983).

17. Krishna (1967), pp. 517-21.

18. What follows is largely based on Subbarao (n.d.).

19. The debates on price policy are not restricted to professional academic journals, they are conducted also, fairly regularly, in newspapers, at public meetings and within the State and Central legislatures.

20. For a cogent exposition of this view, which attracted a good deal of controversy, see Mitra (1979).

21. Representative views of the different parties are explained, for example, in C.P.I.M. (1973 and 1981), Nathan (1982) and Sinha (1980).

22. See Krishnaji (1975) and Krishna and Raychaudhuri (1980).

23. The growth of farmer's lobbies and movements has been traced in Nadkarni (1981).

24. The growth rate calculated separately for aggregate output shows a higher value than that of population but the growth in per capita output is found to be statistically insignificant. This is a statistical artifact. The data are given in Roy (1984) and Krishnaji (1988). See in particular the graphical representation of the data in Roy.

25. Roy (1972).

26. Mehra (1981), Hazell (1982) and Roy (1970, 1971 and 1983).

27. Harzell (1982).

28. Roy (1984).

29. For example, Krishna and chibber (1983) and Gulati (1987).

30. For the data see Roy (1984) and Krishnaji (1988).

31. For cost-price comparisons see Krishna and Raychaudhuri (1980).

32. de Janvry and Subbarao (1986), pp. 20-27.

33. See in this context the discussion in Roy (1984); also for a case study of rice, Subbarao (1978a).

34. A review of the actual process of price fixation by the APC is contained in Kahlon and Tyagi (1983).

35. For a review of the debate see Vittal (1986). See in particular Mitra (1979) and Tyagi (1979).

36. See Roy (1984) for the data and Krishnaji (1988) for further discussion.

37. Questions relating to stock policies have been addressed in Ray (1970), Krishna and Chibber (1983), Krishnaji (1988) and Reutlinger (1978).

38. For details of these recommendations see Acharya (1983).

39. Krishna and Raychaudhuri (1980) discuss the empirical determinants of procurement prices.

40. Askari and Cummings (1976).

41. Krishna and Raychaudhuri (1980).

42. Subbarao (1985). See also Mahendradev (1987).

43. For a debate on the poverty-price relationship see Mellor and Desai (1986) and for a comment on the statistical methodology see Krishnaji (1987).

44. See Bhattacharya et al. (1985).

45. See Chapter I in United Nations (1975).

46. Mitra (1979). This important aspect of relative prices is not dealt with in this survey.

47. This section draws heavily from de Janvry and Subbarao (1986).

48. de Janvry and Subbarao (1986) attempt to grapple with this complexity through a Computable General Equilibrium (CGE) model, which enables them to carry out several simulation exercises. They find that technological change in agriculture and irrigation development with flexible prices are essential for alleviating poverty. Price flexibility benefits both rural and urban workers through a combination of employment and deflationary effects. In general it benefits the net buyers of food through relatively low prices. Generally, they find price-incentive policy an inferior alternative to technological development, especially in relation to welfare goals.

CHAPTER - V

INSTRUMENTS OF AGRICULTURAL PRICE POLICY - PERFORMANCCE APPRAISAL

C H A P T E R - V

INSTRUMENTS OF AGRICULTURAL PRICE POLICY

PERFORMANCE APPRAISAL

MAJOR POLICY MEASURES : Apart from allocating huge sum of money under various schemes for agricultural sector, the Government has been evolving from time to time various major instruments of policy with a view to achieve increase in food production, equitable distribution and stabilisation of prices for the benefit of both the producers and the consumers. The important among the various instruments of policy are procurement of foodgrains by compulsory levy and restrictions on inter State trade, distribution by public agencies, price policy for purchase and sale of food grains, role of Food Corporation of India, role of Agricultural Prices Commission, 20-Point Economic Programme, Nutritional Programmes for children, and Minimum Needs Programme etc. In subsequent paragraphs, a brief review of some of these measures is made.

THE ROLE OF PUBLIC DISTRIBUTION SYSTEM : Food continues to remain the most pressing concern for the average Indian. With the food prices index increasing from about 200 in 1990 to 304.1 by December, 1994, the common man has undoubtedly been hit rather hard. The irony of this happening during a period when economic 'reforms' are under implementation with an assurance of their 'irreversibility and with food stocks at an all-time high of about 31 million tonnes and another bumper Rabi harvest around the corner can be mitigated only if nutrition and employment generation are made an integral part rather than an appendage of economic 'reforms'.

During the early fifties the PDS issuance (mistakenly described as offtake) ranged between 4.6 milion tonnes during 1953 and 8 million tonnes during 1951. The early nineties saw the level peaking upto 20 million tonnes in 1991, but declining subsequently to 5.1 million

tonnes during 1993. The months of 1994 have seen a further precipitous nosedive by the PDS issuances at 8.15 million tonnes upto November 1994 thanks largely to an increase in the central issue price of wheat and rice.[1]

With population increasing from 367 million in 1951 to 846 milion in 1991 i.e. making it approximately 2.33 times larger, it is apparent that there has been some marginal improvement in the per capita issuance of cereals under the PDS banner,. The increase in per capita real income from Rs. 1350 per annum (at 1980-81 prices) to Rs. 2276 during 1992-93 may also be treated as a positive blow in the direction of better access to food if one can either ignore worsened income asset distribution or assume it to be neutral.[2] An overview of the longterm changes witnessed in food availability and prices may be supplemented by a reference to the number of people who (despite national level food security guaranteed by large and growing buffer and operational stocks) have not been able to obtain, at their microlevel, food security. Inadequate growth in off-farm work opportunities, large spurts in the largely unaffordable price level, distribution disruptions and bottlenecks, recurrence of drought and the resulting decline or slowdown in the growth of farm output in those years, convert the generally obtaining food insecurity for these indigent sections of society suffering from continued malnutrition, into an encounter with starvation.

The basic point is that neither the overall economic change nor the changes in the food sector have diminished the force of the factors which necessitate the PDS. Persistence of inflation, fluctuations in food availability and prices, perverse distribution of purchasing power, regional imbalances in the production and requirements of food,

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1. Kabra, K.N., 'Revamping the PDS' Financial Expenses, April 20, 1995.

2. Ibid

inter-crop imbalances, procurement of cereals by way of implementation of price support policy leading to the building up of buffer and operational stocks, widespread prevalence of malnutrition, distributional bottlenecks and disruptions, particularly in the remote, hilly and deficit areas use of emergency imports to meet domestic shortfalls etc. continue to underline the need for an enlarged and strengthened PDS.

Increasing cost of production annual increases in support prices and the PDS issue prices are making the PDS prices equal to the open market prices. This is making both the sets of prices unaffordable and are pricing out the poor from the market for cereals. Let it be stressed that with nearly equal prices under PDS and in the open access market the logic meaning and effectiveness of PDS is totally lost. The essence of the PDS consists in assured daily or weekly supply at prices which are reasonably lower than the market prices: prices which do not cross the affordability frontier for the really poor masses and which can be bought conveniently in keeping with the uncertain irregular and low incomes and in the far flung and inaccessible areas the same way as in the metropolitan, centrally located and surplus producing regions.

It is a method of translating our national food security into micro family and personal level food security through a network of Fair Price Shops (F.P.S.) which now number more than 4 lakh. In this sense it is an availability price and anti poverty,inflation insulating public programme as an adjunct of our development agricultural food price and poverty alleviation policies. In the context of the current structural adjustment policies, this is the most effective means for ensuring a human face to this otherwise harsh programme.

Even a cursory examination of the Indian scene would indicate that with respect to wheat, rice, coarse grains pulses, edible oils, sugar, tea,

etc. i.e. essential non-perishable consumption goods, especially of agricultural origin (especially given our macroeconomic environment and multifaceted socio-economic inequities, heightened by the recent policy shifts), there is no escape from having a strong public distribution system as a supplement to the usual market mechanism.

Our present PDS, though useful, particularly in Tamil Nadu and Andhra Pradesh, thanks to a good price spread between the PDS and open market prices and in Kerala and West Bengal's urban/metropolitan areas owing to organisational effectiveness, by and large in the rest of the country has to be treated as a token symbolic relief and inflation insulation system. This is because:

(1) The PDS prices have been increased defying the logic of the PDS under the fiscal pressure of containing subsidies. The fiscal argument may be self defeating to the extent that high PDS prices induce reduced offtake, enhance involuntary stock build-up, push carrying cost and increase the economic cost or the deficit of the FCI. This kind of a deficit induces lack of accountability and comes handy as a cover for wasteful spending inefficiency sloth and malpractices.

(2) Excessive entitlement under the PDS in comparison to (i) the quantities released under the PDS (ii) the genuine need for the PDS supplies, as revealed by the redistributive logic of the inflationary processes and the actual offtake behaviour of different socio-economic group in different regions.

(3) Administsrative organisational infirmities, dysfunctionalities and failures. These include the difficulties in obtaining ration card, its massive misuse by the underserving and the black marketiers, inconvenient and exclusionary issue period, transportation bottlenecks and irregular supplies add-ons by the

state authorities, poor quality at times unfit for human consumption, location and functioning of FPS and the choice of the agents to run it.

Thus, involuntary exclusion by the logic of the market (the PDS is a market-based, market correcting intervention contrary to the objectives of the PDS) and the needs of the people has emerged in our country. The present policy seems to be basically a by product of the primary concern for the producer, which is incidentally sought to be used for presenting a people-friendly face. Even countries like South Korea steadfastly-adopted policies of keeping the essential wage-good available regularly and at subsidised prices. In Japan, the wartime food controls have survived into the 1990.

Strengthening, revamping and targetting the PDS are essential. But this is not the only option. However, in so far as certain regulation over prices, distribution, stocking and regional allocation of the essential wage goods retain centrality in any such exercise, the nomenclature of the alternative or supplementary measures should logically remain PDS. Its main elements may well be :

(1) Linking up with the assured right to livelihood and participation in the economy. While it would create a widened market, doing away with the embarrassment of the coexistence of silent and widespread hunger with over flowing granaries, is contribution to supply augmentation should be by no means inconsiderable.

(2) Payment of part of wages in kind, along with land revenue collection in kind (payment valued at market price, which could help increase procurement) on the full employment guarantee programmes.

(3) Making 60 to 70 per cent requirements of the farm workers, artisans, casual urban workers, etc. available throughout the PDS, ensuring FPS level regular and full supply.

(4) The PDS prices must remain lower than the open access market price, ensuring a real income transfer week after week. It is an effective negative income tax in kind for the poor which unrealistic schemes like food stamps cannot ensure with so many externalities and with such proven effectiveness.

(5) A people-friendly administrative organisational design, where the needs of the users, the really deserving ones, dictate the design of the PDS.

For social equity macro economic sensibility, nutrition for all special dispensation for children and women, regional balance, regulated trade, sound wage policy, the revamped and targeted PDS as suggested above, would make its unique contribution in many different directions. It presupposes a new social responsiveness in our state structure and processes beyond the concerns for 'image' and human face.

FOOD GRAIN BUFFER STOCK : The foodgrain buffer stock situation in India is turning out to be an embarrassment. The reserves are at an all time high of more than 30 million tonnes. But we do not know what to do with it. We cannot export in a big way because pricewise and/or quality wise we are not competitive. We are not selling in the domestic market (other than some token amount) for fear of domestic prices crashing and adversely affecting the interest of certain sensitive groups. We are not releasing significantly for the poor because of the likely effect it will have on the food subsidy and thus, on fiscal deficit. Neverthe less we are paying heavily by way of storage costs for facilities owned by FCI, as well as the rented ones, as if these are inconsequential to the size of the food subsidy. And, all this is happening when the country's poor is estimated to be on the rise and investment in agriculture is dwindling. In short, we are just frittering away resources at the cost of both growth and social justice.

This need not be so. A little reflection will show that with a certain amount of foresight and a set of policies in a liberalised environment, we should be able to come out much better on the food front without compromising any of the major objectives of food policy.

The objectives of the food policy are three-fold:-

(1) to ensure that producers get reasonable prices and continue to have adequate incentives for increasing production.

(2) to ensure that consumer prices are stabilised and, in particular, the interests of low income consumers are safeguarded; and

(3) to build adequate buffer stocks of foodgrains with a view to ensuring both the objectives mentioned above.

All the objectives are laudable and need to be pursued. It is the means to achieve the objectives which need to undergo a change. The main problem is with the manner the second objective is being achieved. It is defeating both the first and third objectives without achieving anything on its own. Briefly, to achieve the second objective, the government procures a part of the marketable surplus from the farmers/traders/millers at procurement price which is usually higher than the minimum support price (announced to meet the first objective) but lower than the wholesale market price. It then, distributes the grain through the network of public distribution system at issue price which is below the open market retail price. The government tries to maintain the issue price within a reasonable range even in the face of rising costs, including transport and storage. This builds up the subsidy.

The problems with the above are the following:

(1) the farmers lobby, since procurement prices are usually lower than market prices, puts continuous pressure on the government to revise the procurement price upwards which the government does,

thus adding to the food subsidy. In reality there may not be a case for it. For example, the latest Economic Survey shows that the terms of trade have favoured agriculture throughout the '80s and mid '90s.

(2) for all practical purposes, procurement price has become the minimum support price, thus, defeating the main objective of minimum support price and adding to government costs. In the process the government has lost control of how much to procure, which has, sometimes resulted in uneconomical stock build up; and

(3) government intervention in the market has failed to meet the primary objective of protecting the interest of the low income consumers because the PDS lacks focus and direction; and the unprecedented build up of the stocks is mainly due to PDS price being unaffordable to the poor.

What can be done to make the policy more effective? My suggestions are as follows : Continue with the minimum support price, to be arrived at after taking into consideration the cost of production and normal profits, to ensure that producers have the necessary incentive to produce. But have no other government intervention in the grain market. The political fall out of such a step will be minimal because the farmers have been, in effect asking for it; secondly, it will be increasingly clear that in a liberalised atmosphere, certain groups of farmers, with the required resources, will switch to more lucrative non-food-grains and agri-business and the goal of foodgrain self sufficiency will, in any case, get eroded. This is already happening and, finally, the government will also realise that, given the above fact, and a stagnant foodgrain technology, higher procurement prices cannot play an effectige role in bringing about the desired increase in production. There may be better use for government money.

In order to meet the second objective,

(a) make the subsidised grain distribution more target oriented by concentrating on commodities which the poor consume. This will include jowar, bajra, maize, rabi etc. and the coarsest variety of wheat and rice, Channel it, as much as possible, through development oriented programmes like the various rural and urban employment programmes; (b) buy the grain in the open market for the above purpose. First, because of (a)above, the size of government operations in the grain market will shrink. This will bring down the total cost of subsidy. Secondly the open market price in an uncontrolled market is likely to be lower than the open market price in a controlled market; hence, even the per unit cost of grain purchased may not be much higher than what it is at present, and finally, with the resources at its command, the government can obtain information from various markets and clinch the best deal, thus further bringing down the costs. But, will the consumers who may now have to purchase from the open market protest? Unlikely, the PDS price presently is getting closer to the open market price. Nobody is protesting !

To conclude, the last objective. The issue here is whether primary reliance should be placed on imports or stock management. It has always been a widely debated questkion.All these yuears when India was operating in a closed economy, it probably made sense, if not economic, at lease political, to go in for massive stock piling of grains. But a national grain reserve is expensive.Now with the opening of the economy, we can explore more cost effective approaches to food security through international arrangements. I think we should go in for minimum size of buffer stocks, to be built up purely from support operations, the remaining short-falls being made lup by imports.

In summary, the thrust of my argument is that, in a liberalised atmosphere, we must get out of the mind set that foodgrain self

sufficiency is the goal of food policy and has to be achieved at any cost. Our policiess will have to be dictated by needs of global competitiveness. We do not enjoy a comparative advantage in foodgrains but we do in may other agricultural products. Let us cash in on that. We must protect the interest of the small farmers who cannot cash in and of poor consumers. We must step up investment to remove the existing inefficiencies in the foodgrain production. But we must not waste money in the manner we are doing now.

A FREE FOODGRAIN MARKET : The foodgrain stock in India are at an all time high. With but one more good monsoon being predicted, there is concern about dealing with stocks have caused an alarm, not simply because of the cost of storing, but also because the prices of foodgrains have not decreased in spite of the huge stock piles. The current situation causes one to question the efficacy of the government's long standing role in the foodgrains industry.

The government's active involvement has had two objectives : holding prices within a range politically acceptable and making foodgrains available to the economically disadvantaged at affordable, subsidised prices. Unfortunately, however, India's and the previously communist countries' experiences suggest that governments have not been particularly successful in influencing foodgranis prices without hurting their economies.

There are important dimensions to the government's role in the foodgrain industry. First, the government offers to purchase foodgrains at preciously announced support prices. Second, import and export of foodgrains is managed by the public sector State Trading Corporation (STC); alternatively, import/export quotas are set by the government for the private sector. Third, the government sells foodgrains at subsidised prices through its extensive public distribution system

(PDS) network. The first two activities are aimed at stabilising foodgrains prices. In spite of the good intent, however, both hurt the economy. How can this be?

Prices in a free market stabilise at a level that equates demand with the supply of a good. The government's intervention in the foodgrains market is a radical departure from a free market. Since the government pre-announces the support price, a high price elicits greater supply, as witnessed currently. In a free market, increased supply would have lowered the price, which in turn would have depressed the supply, and so on till demand equals supply. But pre-announced support prices eliminate this market mechanism.

In the absence of support prices, farmers forecast prices that are likely to prevail at the time of harvest. These forecasts guide them in deciding the acreage to be planted with a particular crop. But since actual prices at the time of harvesting might differ substantially from those forecasted, farmers bear considerable price risk. The risk impairs farmer's ability to borrow money in advance towards fertilisers, farm equipment, etc. The economy as a whole suffers because the risk is not borne by those who can best bear it.

Support prices have indeed protected farmers from the price risk, so the government's objective in offering suport prices is estimable. However, this benefit comes at a cost: the government unilaterally announces the support price, but is does not specify the quantity. So long as the suport price exceeds the cost of production, farmers have an incentive to increase the crop's acreage. Also, should the open market price be higher than the support price at the time of harvesting, farmers will choose to sell their output in the open market. Farmers thus enjoy a valuable option at the expense of the rest of the economy.

The economy is hurt bacause support prices encourage over investment in the agricultural sector. This did not seem to be a problem in the past. India experienced severe food shortages. The times have however, changed, there is a large inventory of foodgrains.If the support price is too high, then excessive invenstment will occur in farm labour, farm equipment, fertiliser, power, and water. Since most of these are scarce resources that could be allocated to more profitable projects, the economy suffers.

The government's attempt to reduce the value of the option farmers have to sell their harvest in the open market in periods of high prices has also harmed the economy.For example the government has sought to contain rising prices by imposing restrictions on inter state foodgrain transport. This means the supply of foodgrains in states like Punjab outstrips local demand, which depresses the open market price in that state. Farmers are thus forced to sell harvest to the government at the support price. This forced generosity, however encourages 'illegal' transport of foodgrains across state borders; it creates opportunities for corruption because the difference between the open market price and the subsidised price widens in most part of the country. It also alienates farmers from the federal structure of India, thereby sowing the seeds of secession.

There are better, less costly solutions that would mitigate the price risk facing farmers. A well functioning commiditry futures market can reallocate the price risk from farmers to other participants in that market. The analog of a support price in a futures market is the futures price. The farmer can contract to sell his expected foodgrain output at a price that is negotiated at the beginning of a season. The farmer is thus insulated from price risk.

Neither support prices nor a commodity futures market can elimante volatility in the prices of foodgrians. Weather dramatically affects output. Income and population growth and income distribution affect the demand for foodgrains. These factors move prices. Price stabilisation through support prices is a mirage chased by India's politicians and regulators.

Relaxing all restrictions on the import and export of foodgrains will dramaticlly reduce volatility in their prices in India. Fluctuation in the world foodgrains output are far smaller than those experienced domestically, as it is unlikly that droughts or floods will affect all countries simultaneously. Integrating India into the world market therefore will reduce price volatility, although it will not eliminate it.

The government has controlled the import and export of foodgrains through STC. However, STC managers have little incentive to monitor the demand and supply of foodgrains on a regular basis. The timing of imports and exports is more likely to reflect crisis management than anticipated shortfalls or excesses. The absence of a profit motive for STC and the potential to profit illegally from mismanaging imports and exports make it unlikly that the government would ever be able to manage exports and imports efficiently.

One reason politicians and bureaucrats frequently offer to explain their unwillingness to permit free imports and exports of foodgrains is that traders and speculators would manipulate prices of foodgrains to the disadvantage of the common man. This line of reasoning is logically flawed and empirically incorrect. First it is naive to assume that tens of thousands of traders can collude to manipulate prices. Second, while it is possible that traders might influence STC to be slow in responding to supply shortfalls, the problem would be solved by

encouraging competition in import and export of foodgrains. This will ensure that price volatility is caused by economic forces of worldwide demand and supply, and not STC's mismanagement or collusion between STC and traders. Opportunities for domestic traders and merchants to manipulate the open market prices would disappear entirely if the import and export of foodgrains is deregulated.

In view of the huge economic costs, the well intentioned policies of support prices and import and export regulation should be scrapped. An unregulated foodgrain market will have all the characteristics of a competitive market : thousands of traders, millions of consumers, entry and exit into the market at low costs, and fairly homogeneous products. The government has no comparative advantage in managing this market either directly through STC and the PDS, or indirectly through regulation. Without necessarily abandoning the programme of offering a food price subsidy to the economically disadvantaged population, the economic interests of India will best be served if the government minimises its involvement in foodgrains.

AGRARIAN REFORMS AND LIBERALISATION : The apparent paradox of the congress gaining an anti-poor and anti-farmer image despite the increased allocations for rural development and higher procurement prices has led to a variety of conjectures at the political level. While some have focused on the need to improve the packaging of reform, others, not just in opposition parties, believe that government handouts in one form or another have now become essential for survival in power. In the whole debate agrarian reforms has not found a mention. Even the left parties interested in attracting foreign capital to the states they rule, have not dared to explore the potentially rewarding link between agrarian reforms and liberalisation. Much of this disinterest in agrarain reforms at the present moment is the result of

the well entrenched tendency to view these reforms entirely in terms of two measures : land to the tenant and land ceilings.

Neither of these two measures is designed to remove the present constraints on Indian agriculture. At a time when the scale factor can be a significant constraints on production, making land ceilings more stringent will not, in it self, help. Granting land to the tenant too will not improve the scale of production if those losing land are large farmers and the beneficiaries small ones; and if the tenants are large farmers the objective of equity will not be met. But if we take a larger view that goes beyond these instruments and sees agrarian reforms as any intervention by the state to transform agriculture in a direction that is more productive as well as equitable, there may be no better moment than the present to emphasise agrarian reforms.

The need to develop alternative methods of intervening in agriculture develops a sense of urgency from the failure of the main instruments the government currently uses to intervene in this sector: procurement prices and doles. Procurement prices have reached levels where they encourege for greater production than there is demand. As a result any government that procures all that is offered must be prepared to accept an increasing food subsidy, as passing on the burden through higher issue prices only furher reduces demand in addition to being politically suicidal. And trying to meet the economic aspirations of an increasingly conscious rural population in the dryland areas through doles is clearly not feasible in a country of India's size.

Implementing a fundamental reforms that makes the agrarian system more productive and equitable will also help a liberalised economy to take off. A more productive agriculture will, through increased profits, enlarge the capital base that the Green Revolution has already created in the rural economy. A more equitable spread of the benefits of this

growth, covering dryland regions and the poor in the irrigated areas will also increase the demand for products of both the rural and urban economies.

The interests of sustained liberalisation, therefore demand that the government identify the major constraints on productivity and equity in the agrarian econmomy and then intervene in a manner that would remove these constraints. One of the constraints on increasing productivity is the scale of production. This is particularly true of dryland regions where water retention technologies have to be implemented over an entire watershed. With the government not having the resources to invest in these technologies on its own, the alternative will be to create operational farms that are large enough to cover an entire watershed so that the farmers themselves find it worthwhile to invest in the new technologies. The magnitude of such investment will also depend on the amount of capital that is available for agriculture.

The constraints on equity tend to be more varied. Regional inequity is accentuated by inadequate options in dryland areas, where the crops grown are often only inferior cereals. Offering more profitable option will have to be linked to increasing the availability of alternative sources of food for those currently consuming the coarse cereals they grow. The potential to improve equity within a region is constrained both by the limited ability of farmers to pay higher wages in some regions as well as the absence of a framework to ensure that minimum wages are paid in all regions.

The first step towards creating a system that removes the above conditions would be to encourage the pooling of resoures. Ideally all resources, including land, could be pooled. This will create large farms which can benefit from economies of scale. The polling of capital will also make it possible to invest in items of advanced technology,

such as harvesters. There are also possible areas of investment that will be considered worthwhile only by very large farms. For a farm that covers all the area irrigted by a village tank, for instance, it may worthwhile to invest in the maintenance of the tank. To the extent that such poooling will improve the prospects of investment in large scale dryland technology that covers an entire watershed, such pooling will reduce inter regional inequalities. Inequalities within a region will, however, depend on how this pooling is brought about. If the pooling of land is not to prove iniquitous it must be done in a manner that not only does affect current ownership patterns but also completely protects the rights of the small owner. In other words, there must be large operational holding while ownership remians below the existing land ceilings.

Once such large operational farms are created the cause of equity within a region would demand than an effective system of minimum wages is in force in these farms. Since the productivity in these farmers will not be even, the specified minimum wage would need to be linked to productivity. Such a linkage would ensure that the wages are related to the ability to pay, while at the same time workers are assured of a share of increased returns.

Such fundamental changes in the agrarian econmomy may appear too radical and even idealistic. But, in reality, the agrarian economy has shown a willingness to accept large operational farms. Corporate houses have experimented successfully with contract farming and there are indications that there will be a further growth in such farming. There are also examples of smaller companies selling small plots of land to urban buyers with the undertaking to manage that plot as a part of a large farm. Merely encouraging such trends may not, however, be the best course to take. Corporate houses are likely to invest in contract farming only as long as profits are large enough to cover their very

substantial overheads. Once profits drop to more realistic levels they would have reason to pull out, leaving the farmers where they were. Again, encouraging farmers to sell agricultural land to urban buyers will prove iniquitous as it will widen rural urban disparities. A more sustained, and equitable, change will thus only be possible if it is brought about from within the existing agrarian structure rather than being created by urban buyers or industry.

Major transformation in agriculture is not a small task and will call for changes in a number of areas. Legislation will need to be introduced so that the rights of those who pool land, or any other asset, are protected. This will involve not only protecting their ownership rights but also ensuring they get a fair share of the benefit. The agriculgtural extension network will have to be revived to a level where it can help set up a few large farms with progressive farmers, so that other farmers recognise the profitability of such of such enterprises. Any government at the State or Centre that goes in for such wide ranging reform will need considerable political will. But the economic rewards of creating a vastly more productive and equitable agriculture will be substantial; leading in turn to political regards that can at least match those provided by Garibi Hatao.

RAISING THE FARM INCOME : Mahatma Gandhi had said: "India lives in her villages, not in her cities. When I succeed in ridding villages of their poverty, I will have won Swaraj". But present day politicians do not look at the villages, except at the time of elections. It is their neglect, and the expolitative system imposed on agriculturists which have made rural India the largest and the poorest habitation of humanity on earth.

The per capita income of the average world citizen is about $ 4,400 while that of agriculturists in India, not more than $ 110. Excluding the three tiny countries, Mozambique, Tanzania and Ethiopia, whose

combined population does add up to even 10 crore, there is no country in the world with an average per capita income below $ 150 . In quality of life too rural India is far behind the world average. Illiteracy and infant mortality rates in rural India are 64%, and 85 per thousand, against the world averages of 35% and 48 per thousand, respectively. More than half of those who die in rural India get no attention from qualified doctors.[1]

Poverty and the related miseries of life in rural India are but man made. Considering the percentage of arable land to total land area (51% against world average of 11), abundant availability of water and moderate temperatures, India is ideally suited for agricultural production. Yet, her productivity per hectare and per agricultural worker is amongst the lowest in the world. In spite of the vast unrealised potential, the average annual growth rate in agriculture during 1980-1993 was just 3%, against 4.4 in Pakistan, 3.6 in Nepal, 5.3 in China.

During the four years of the Rao regime, the average annual growth of agriculture has slowed down to 1.6 % , which is also reflected in the decline in the national income generated in the farm sector. This, despite good monsoons. Between 1990-91 and 1993-94, national income from agriculture rose from Rs. 58,921 crore to just Rs. 60,934 crore (both at 1980-81 price), an increase of 1.1 % per annum against the population growth of no less than 1.9 %. At the same time income of non agriculturists rose during the three years at the rate of 4.1% per annum.[2]

The slow growth of agriculture can be blamed on the sharp decline in capital formation in the farm sector. In 1980-81, capital formation in

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1. Singh, B.P. Man made Poverty of Rural India, The Economic Times dated Sept. 4, 1995.

2. Ibid.

the farm sector was 18% of which 11% was in the private sector and seven in the public sector.In 1992-93, capital formation in agriculture fell to 9% of the total, with 6.9% in the private sector, and 2.1 in the public sector. The slow-down in capital investment was mainly due to poor profitability and savings in agriculture, whilch in turn, have been due to government interventions in the free trade of farm products. The interventions have kept the terms of trade against farmer during the last 20 years. For example, in 1993-94, the terms of trade between farmers and the rest was 0.875 and the national income from agriculture, Rs. 186,141 crore (at current prices).

Justice can be done to farmers only by removing all controls over the farm sector or by ensuring adequate prices for the farm produce. Instead of pursuing these two honest paths of putting agriculture at par with industry, the Rao government has offered lolli-pops to rural poor in the form of old age pensions, mid day meals and the like, which will have no impact on the poverty situation, since none of them will generate any additional income in villages, which alone is the solution to poverty, The total annual cost of all the welfare schemes announced by the government will, in course of time, add up to Rs. 4,000 crore, which will be no more than 0.5% of the national income.

The question is can poverty of 40% of the people be removed by diverting just 0.5% of the national income to provide them temporary relief ? Isn't it shameful that rural children can be attracted to schools only by offering them 100 gms of cereals costing no more than 50 paise? The poverty can be removed only by educating, training and equipping the poor to produce more, and at the same time, ensuring that they get fair returns for their labour.

Our food security system is not designed too help the poor but to appease the organised sectors of the urban society. Otherwise, how can

it be explained, that larger quantities of subsidised foodgrains have been distributed in Delhi alone which holds the richest population in the country, than in a poor state like Bihar.

The government claims its farm price policy is based on very judiciously fixed minimum support prices (MSPs). How can these prices be considered just and equitable, when the MSPs of paddy have often not covered even its cost of production; when the MSPs of all crops have been at a lower level than the cost of living of agricultural labourers (the poorest class) and when farmers have to sell twice the amount of grain to buy the same capital goods (tractors and other farm machinery) compared to 20 years ago. In any case, there is no transparency in the process of fixation of MSPs and no opportunity is given to agriculturists to plead their case. Worst, the MSPs are accompanied by dozens of control measures, which compel farmers to sell their produce at or below the MSPs.

The talk that sums are being spent on farm subsidy is no less hypocritical than the facade of the MSPs. The so called subsidy is really a subsidy to inefficient suppliers of farm inputs or to the corruption ridden irrigation departments. To cite an example, U.P. had spent Rs. 277 crore in 1993-94 on the 28,446 state tubewells for irrigating an area of 15.1 lakh hectares. This means, on an average the tubewells had irrigated only 53.1 hectares each, costing the U.P. government Rs. 1966.9 per hectare of which only Rs. 130.3 was realised from farmers, as irrigation charge, and the balance Rs. 1,836 per hectare was treated as subsidy to the farm sector. Who is gaining from such subsidy? Certainly not the farmers, who are irrigating their fields with their small tubewells and diesel pumpsets costing no more than Rs. 200 per hectare.

Perhaps, all the sins of our politicians can be excused but for their neglect of rural education, the most effective means of promoting

social justice. While physical assets cannot be equally distributed, intellectual assets can be offered to all. Imparting the right kind of education is necessary for providing equality of opportunities, which is the essence of Swaraj.

Acharya Ram Murti has reported: "Almost a half of all children and a third of the girls doo not enter schools at all or drop out at an early stage. The reason is not that the children or their parents do not care for education. The reason is, they soon realise the futility of attending schools. According to a UNICEF report, 40% of the rural schools in India had no roofs, 37% had no blackboards, and 55% had no playgrounds. The reason for all these shortages is that funds allocated for education in India do not add up to even 4% of the national income whereas in most progressive countries these are between 6 to 10% of the national income. Out of the meagre allocation, more than two-third goes towards promoting higher education.

Expenditure on development programmes can be increased only if non developmental expenditure is reduced. In this, the government has utterly failed. It has neither been able to cut down its own size, nor the losses of its loss making units. One main reason for India's poverty is, more and more of the people's earnings have been sucked out of their pockets by the government and spent extravagantly. Worse still the total liabilities of the Central government over its total assets have jumped from only Rs. 77,518 crore in 1990-91 to Rs. 177,218 crore in 1994-95 (BE).[1]

Rural poverty can be reduced only be raising agricultural income, for which there is ample scope. This can be done by taking three steps: Extending the area under cultivation; raising land productivity; and allowing agricultural prices to rise upto their global levels.

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1. Singh, B.P. Man made Poverty of Rural India, The Economic Times dated Sept. 4, 1995.

The first step will raise production by 28%, as the area of culturable waste and fallow lands add up to 28% of the currently cultivated area. Productivity of land can be doubled by enabling the farmers to apply farm-inputs in adequate measure. Allowing our agricultural prices to rise to the globel levels will raise the farmers income at least by 20%, which alone can ensure adequate application of farm-inputs by our farmers.

In fine it may be said that on the whole, both the short-term and long term trends indicate that the Indian food policy has been experiencing full of ups and downs conditioned largely by the seasonal factors. The Policy has been one of controls in varying degrees when the situation became difficult, followed by perhaps premature optimism leading to relaxation of controls when the situation improved a little. The frequent changing policies of the past four decades have been the result, on the one hand of a tendency to make changes in policy in the context of fluctuation in production caused by seasonal factor, on the other, of under-estimation of the practical difficulties and hazards of actually translating policy into effective action. Various expert committees have recommended policies which are unexceptionable and conceived in the national interest. If these policies have been found not possible for implementation, it is because sufficient account was not taken of political compulsions and inadequacies in the fields of procurement and distribution. It has always been difficult for the Government of India to persuade all the States to fall in line and accept the sacrifices that are necessary for the proper implementation of the food policy. The experience of the last 40 years has clearly demonstrated that a solution of the food problem in the near future does not lie in the complete reliance on the market mechanism. A substantial degree of Governmental intervention is inevitable and the logical outcome of the dischare of Government's responsibility to feed

the people. On the other hand, food controls involving, as they do, restraint on consumption by way of rationing, formal or informal,procurement from producers, regulation of the trade and restriction of movement of foodgrains from one State to another and within a State provoke irksomeness, difficult to administer and have created growing disparities in regard to prices and availability between one State and another. It is this conflict between what is logical and ideal and what can, in practice, be implemented, that explains the ups and downs of the food policy practised so far.

CHAPTER - VI

RELEVANCE OF THE THEORY OF PRICE DETERMINATION TO THE AGRICULTURAL MARKETS

C H A P I E R - VI

RELEVANCE OF THE THEORY OF PRICE DETERMINATION TO THE AGRICULTURAL MARKETS *

In the third chapter, an historical account of foodgrains production, price and policies in the Indian economy has been discussed, with a view to provide a perspective of the food situation in the country, the magnitude of the food problem and efforts made by the Government in resolving it. No attempt was made in that chapter to analyse the causes of the wide variations in the prices of foodgrains and to assess the success achieved in maintaining stability through the policies. For such an analysis, appropriate theoretical foundation is essential. In this chapter, an attempt is made to study the relevance of the theory of price determination to the Agricultural Markets with special reference to foodgrains markets. Based on these therortical foundations, empirical analyses are carried out and presented in the next chapter.

1. THE SETTING OF AGRICULTURAL PRICES : The problem of analysing and explaining the behaviour of agricultural prices arose out of the increasing orientation of agricultural production and consumption towards marketing and exchange inside as well as outside an economy Such orientation, while providing agriculture with the benefits of economic expansion, also brought forth peculiar price movements- peculiar, at any rate to the general price-theory which had been formulated mainly in the context of manufacturing industries. As a result, a general feeling of diffidence has characterised all attempt at incorporating agricultural price-phenomena directly into the folds of the price-theory.

There is, of course, an important and considerably large section pf agriculture which is carried on the level of subsistence-farming,

* (With Special Reference to Foodgrains Markets.)

especially in under developed countries like India. The activities of this section, being outside the influence of money and the price-system greatly reduce the role of price-analysis in agriculture. These, however, constitute a problem applicable to econmic theory in general in so far as they arise out of the sociological disparities between agriculture and industry. Moreover, the trend all over the world is towards greater monetisation of agriculture, and the very fact of a growing agriucltural price problem speaks of a concomitant reduction of the non-monetised sector.

Allowing for self-contained farms, there have been two other considerations which appear to have crowded the scene of the fundamental task of bridging the yawning gulf between price analysis for industry is a 'way of life', and consequently the economic decisions of the farmer are not guided by the price incentive. The farmer may count more upon an adequate income for his life and remain insensitive to price movements. Secondy, as emphatically pointed out by Prof. Schultz[1], farm price disussions have been tied down-mostly because of pressure from the public during the great depression to a series of particular short-run farm problems, treating them as if they deserved to be isolated from general price analysis.

The above are practical considerations, and they do largely qualify the importance of theoretical results for agricultural policy. the theoretical model for industrial prices is based on the hypothesis of profit-maximisation. Price of a commodity is determined by the interaction of the forces of supply of and demand for the commodity. Factors of production are assumed to be employed upto the point where their marginal costs equals their marginal revenue product. Provided the price-mechanism is not handicapped by other maladjustments, its

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1. Schultz. T.W. Production and Welfare of Agriculture, (New York, Macmillan, 1949), p. 83.

working would bring about an optimum allocation of resources between industries, and the most satisfactory allocation of goods and services between consumers.

The fact that agriculture is a 'way of life,' along with the economic conditions causing short-run problems peculiar to agriculture, may eagerly qualify the application of the profit-price model to agriculture, from the stand-point of agricultural policy. It need not, however, exclude agriculture from the purview of the general price-theory, unless it definitely implies a separate price-theory for agriculture. Industry itself is full of particular cases which are not quite susceptible to the general rules of the price-theory. It appears, therefore, wise to assume, as Gibs points out, "that agricultural economics is not a special kind of economics".[2] According to him, "ordinary analysis appears nevertheless, to have some application, because farmers have some choice of occupation without abandoning their way of life. There is not a little evidence to show that of the out puts which are technically possible, the farmer will produce a collection very like that which would yield the greatest profit, although, infact, he may never operarte at the point of equilibrium".[3]

Again, the predominace of natural and social conditions making for unusual instability in the short-run may render agricultural prices into highly correlated phenomena shifted for methods of statistical analysis along with or independently of qualitative analysis.[4] Even here, the validity of the results of statistical analysis is to be tested by their "conformity with economic theory."[5]

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2. Gibs. B.D. "Agriculture and the Price Mechanism" in Oxford Studies in the Price Mechanism, Ed., T. Wilson and Andrews, (Oxford, Clarendon, 1951). pp. 173-74.

3. I bid., p. 174.

4. Working. H, "Research in Prices of Farm Products," pp. 54-55.

5. Shepherd. CS., Agricultural Price Analysis, (lowa, lowa University Press, 1941).

2. DIMENSIONS OF AGRICULTURAL PRICE VARIATIONS : Assuming that prices in agriculture tend to be determined by equilibrium of forces of supply and demand, the special object of agricultural prices analysis would be to analyse price-phenomena which admit strictly agricultural explanations out of a large picture of economic circumstances. This is important especially from the stand point of agricultural price policy. Thus, while dealing with short-term or long-term variations in agricultural prices, the specific object analysis is to cull out and explain specific movements in agricultural prices, by comparing agricultural price indices with parallel series of non-agricultural prices or the prices paid by farmers or the general price level. Such is the rationale behind the calculation of the well-known "partiy for agriculture in relation to industry and the non-agricultural sector. There is, of course no absolute validity attached to such comparisons. They depend entirely upon the validity of the base period for repesenting equilibrium between agriculture and other parts of the economy.[6] They may, however, be useful in guidinbg formulation of short-run agricultural price-policy.

The forces of supply and demand even when considered with reference to specific price variations due to developments and conditions on the farm as such, do not fall into two homogenous groups. On the demand side, various factors such as the quantity of a commodity sold relative to population, the quality of the commodity, the spendable income of the consumer, the uses to which the commodity can be put, the prices of competing goods, etc., are relevant. The supply side comprises of factors such as the quantity produced or marketed, the quality of the commodity, the established level of output, the character and prices of the resources, the type of organization, the length ot time required for adjusting output etc. The usual non-mathematical method of

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6. Ibid., p

displaying these two sets of forces is to present them as schedules of basic price quantity relationships wherein the effects of forces other than quantity may be regarded as modifications of the shape or the position of the demand and supply curves based on these schedules.

Study of price-determination will be further simplified, if we recognise significant dimensions with respct to which influences of changing supply and demand are brought to bear upon agricultural pices. Ezekiel suggests that agricultural price variations may be viewed with respect to three dimensions : differences in space, in the marketing process, and in time. The time-element in price-variations is reflected by price relations which are constantly being set up in new transactions. The transactions, as such occur at different levels and in different forms of the marketing process, and at varied points geographically. The price-change in any market cannot be completely explained until changes with respect to each dimension are seperately studied and correlated with each other.[7]

Accordingly , agricultural prices can be studied mainly under three heads of analysis:

(a) Movements of prices as related to the time series of relevant economic magnitudes.

(b) Price-differential arising out of the structure and operation of markets.

(c) Regional price differnces.

3. VARIATION OVER TIME : Agricultural price-variations reflected in time-series again fall into fairly distinct group of short-term and long-term variations. The distinction between the short-run and the long-run is not permanent and static. Such distinctions varies from

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7. Ezekiel. M., "Factors Affecting Prices"- in Research in Agricultural Prices, Ed

industry to industry and activity to activity. Agriculture, however, presents distinctly short-term variations traceable to the natural limitations of its production.

SHORT-TERM VARIATIONS: A distinguishing feature of the price phenomenon in agriculture is its comparative instability in the short-run. This feature has claimed most of the attention of the farming community and the public especially since the 1920's because its specific effect on agriculture was to render the income of the farmer highly unstable. The effect of price-changes in agriculture, unlike in industry, is concentrated on the income of the farmers rather than on the production of crops, which usually remains remarkably stable in the short-run in spite of price-change.

It is, however, not possible to explain such fluctuations in prices and income, exclusively in terms of demand or in terms of the obtuseness of the farmer with regard to supply. There is the popular notion that a fall in agricultural prices is always due to a surplus in production. This notion ignores demand altogether. Prof. Thomson[8] points out that the popular concept of 'surplus' which is loosely associated with falling prices in agriculture bogs the question by pre-supposing a 'normal' level of production as related to a preconceived 'normal price'. The price-movements at any time are the result of supply and demand forces taken together. The Comparative instability of agricultural prices, seen in this light, appears to be the outcome of peculiar technical and psychological factors which work hand in hand with the economic factors determining supply and demand in agriculture.[9]

DEMAND : Though demand is not the major contributory cause in this connection, for farm products combined together it is so inelastic

8. Thomson F.L. Agricultural Prices, (New York, McGrow-Hill, 1952).

9. Thomson Edgar, An Introduction to Agricultural Economics, (London, Thomas Nelson, 1949), pp. 194-7.

especially in the high-price brackets, that a small change in demand brings a proportionately larger change in price and income. In terms of single possibilities of substitution in consumption as well as manufacturing. For farms products in the aggregate demand is highly inelastic, as they predominantly comprise of food products, the desire for which is limited by the "fundamental inelasticity of the human stomach." [10] W.W. Cochrance in an interesting attempt to work out the elasticity of demand at the retail for food in the U.S.A. estimates it at 0.4 Elasticity of demand at the farm will be still lower, because of the middle-man's margins which in practice, remains rather stable through periods of high and low prices, though changing from periods of prosperity to periods of depression thus, the greater the width of the margin, the lesser the elasticity of demand at the farm; and as demand changes, farm price changes more proportionately than the retail.

SUPPLY : The more dominant factors belong to condition of supply, which remains remarkably fixed in relation to price-changes because of economic factors making for high inelasticity of supply, as also technical and psychological conditions of agricultural production.

An important consideration is the high proportion of fixed cost compared with the prime costs of production. Because farming has to maintain fertility of land and further because farm labour is usually self-employed, many of its operation costs are also maintenace costs. Even the cost of hired labour is in many cases inflexible, as it cannot be varied marginally unless casual labour is conveniently available. [11] As a result the range within which the farmer can profitably effect changes in his out-put is very narrow. Coupled with this, the highly competitive structure of agriculture prevents the farmer from

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10. Cochrance W.W. "Farm Price Gyrations"- An Aggregative Hypothesis, (JEE,) May 1947.

11. Gibs B.D., Agriculture and the Price Mechanism, op. cit., p 177.

affecting the prices of his products to any large extent. Even a national programme like the AAA in the U.S.A. could not appreciably reduce production below previous levels except for cotton.[12] Supply becomes specially inelastic in times of falling prices; the supply curve, during such times may turn out to be a one-way curve applicable only to a rising series of prices[13] and "Falling prices breed idle factories, but not idle farmers."[14]

These economic factors are closely associated with psychological and technical factors which further aggravate the inelastic character of agricultural supply. Thus, for instance, the high proportion of fixed agricultural costs is partly due to the lack of any direct relation between the rewards of inputs and the value of their output. Marginal costs of factors hardly tend to be kept equal to their marginal revenue product. For one thing, the concept of costs as such is complicated and vague in agriculture, because of the great range in cost figures, the difficulty in estimating the proportion of general farm overheads, and the unsurmountable task of ascertaining the costs of joint products and complementary or supplementary products.[15] Further even where the farmer is aware of his costs, he cannot, of his own accord, keep them in direct relationship to his prices. There is the technical uncertainty about the yield, as the relationship between inputs and outputs is not known before harvest. There is also the time-lag before a change in inputs becomes effective in adding to a decreasing the supply. The seasonal nature of agricultural production implies that production is not normally a flow.[16] And if the response of supply is not properly

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12. Shepherd G.S., Agricultural Price Analysis, op. cit. p. 24

13. Ibid., p. 26.

14. Thomsen F.L., Agricultural Prices, op. cit., 80.

15. Shepherd G.S., Agricultural Price Analysis, op. cit. p. 165

16. Ibid., p. 166

adjusted to the change in price, a permanent situation of recurring maladjustments may occur, as in the example of 'production and price cycles' found in the markets for hog and beef in the U.S.A.

There are technical factors also arising from the biological character of agricultural production. Added to them, is the psychological insensitivity of farm resources to change in prices and costs; especially farm labour which is attached to family farms. The combined results in the prevalence of a highly inelastic supply of farm products forcing the prices and incomes to bear the brunt of changes in demand.

TYPES OF SHORT-TERM VARIATIONS : In view of the general features of short-term variations in agricultural prices, the following types have been distinguished[17] with reference to the respective sources of change in each type :

(a) Irregular annual variations due to changes in acreage and yield of individual products.

(b) Seasonal cycles due to the seasonality of crop and livestock production.

(c) Production and price cycles self-energising in nature, caused by the production characteristics of some commodities, and

(d) General cyclical movements associated with the periodic business cycles affecting the economy as a whole.

Over and above these, there are secular or long-term movements associated with changes in the relative supply and demand positions of agriculture in the context of economic progress.

ANNUAL VARIATIONS : Interest in the study of irregular annual variations in agriculture has grown up with the need for aiding farmers with forecast of prices, and with control schemes and administered prices.

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17. Op. cit.

This type of variation may be causally related to changes in the state of supply and demend for individual products, coupled with inelasticities of supply and demand. Usually it is the result of irregular changes in acreage, weather, diseases, damages etc. The actual magnitude of the resulting price-change, depends upon the extents of inelasticities and the magnitude of changes of supply and demand. The task of measurement is beset with the basic difficulty of arriving at reliable empirical supply and demend curves.

ELASTICITY OF SUPPLY : The difficulty applies specially to the derivation of supply curves for individual farm products. In the first instance, it is impossible to draw the ideal Marshallian Supply Curve linking the marginal cost curves of individual producers, as the number of producers is very large, and in so far as the expansion of one type of output involves the contraction of other types of outputs, a detailed cost accounts would be required for each group.[18] The usual practice has been to correlate prices with subsequent supplies through statistical methods. Even this method is beset with complications. Firstly, the theoretical supply curve is drawn on the assumption of a strong 'ceteris paribus' clause implying that all other things including the prices of competing commodities remain equal. But changes in demand, which make possible the derivation of statistical supply curves, are mostly associated with similar changes in the prices of other compering commodities. The crude market prices used in drawing supply curves must be, therefore, adjusted for their correlation with other prices, and also casually identified with the specific output related to them.

Secondly, it has been found in practice that at some points supply may react to price in a perverse manner changing inversely with the price. Though this may not apply to farm output in the aggregate, individual

18. Black, J.D. "Elasticity of Supply of Farm Products", JEE (1924).

supply curves may have a slight negative slope at some level of prices. Shepherd[19] cites the example of crop average and livestock population which increased for many products with the fall of prices after the first world-war and the 1929 depression. Further, in countries like India, where a good portion of the farm output is consumed by the farmers themselves, rising prices may not lead to increased supply to the market.

Nevertheless, attempts to derive ordinary supply curves by pioneers like **Dr. Murray, Miss Conhen, Mr. Cornea** and **Dr. L.H.Bean**[20] show that supply curves for particular products slope upward to the right in the normal manner, and are more elastic in the middle than at the ends.

Again, investigations conducted in the U.S.A., by pioneers like **J.L. Thomsen, O.V.Wells** and **L.H. Bean** have further shown that the elasticities of supply for most farm products were less than unity, and often very low.[21]

ELASTICITY OF DEMAND : The derivation of a short-period demand curve is less difficult than the suply curve, because herein the 'ceteris paribus' clause has a wider scope for application. Fluctuations in supply make that possible, and the derivation of such demand curves are random fluctuations resulting mostly from weather-conditions or conditions which are at any rate, independent of changes in demand.

The magnitude of demand elasticity is also found to be low for most of the farm products.The famous study by **H. Schultz**[22] for ten commodities in the U.S.A. showed that demand was inelastic for all the commodities

19. Shepherd G.S., Agricultural Price Analysis,op.cit.,p.96

20. Bean L.H., The Farmer's Response to Price, JFE 1929.

21. Cf., Shepherd, G.S., Agricultural Prices, op. cit., pp.90-1.

22. Gibs B.D., op., cit. p. 185

with the exception of buck wheat and rye. Besides, the elasticity appear to be lowest for agricultural data which represent a period just a little longer than the storage life of a food.[23] For shorter periods, the elasticity may be higher because of short-term storage operations by dealers. For longer periods, elasticity may be again high because of the case of distribution among consumers who may change their tasks.

CHANGES IN SUPPLY AND DEMAND : Changes in supply and demand, as distinct from elasticities of supply and demand, cause wholesale shifts in the positions of supply and demand curves. E.J. Working has suggested classification of these shifts into four sets.[24]

a) Demand constant, supply changing.

b) Supply constant, demand changing

c) Correlated shifts in demand and supply.

d) Uncorrelated shifts.

With either demand or supply constant, the price-quantity data obtaining in the market would easily indicate the corresponding supply or demand curves, where, however, there is correlation between changes in demand and supply, the price-quantity series are merely the outcome of the interaction of a series of supply curves with a series of correlated demand curves. The correlation may be positive or negative. Shepherd cites the case of many agricultural products for which there existed a high negative correlation betwen demand and supply during the ten years between 1929 and 1938.[25] In such cases, it may be often more useful to know what the price-quantity relationship is, than to know what the elasticity of demand or supply is, as there is no independent demand and supply curves to be analysed.

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23. Shepherd, G.S., op. cit., pp. 66-7.

24. E.J. Working, "What do Statistical Demand Curves show," Quarterly Journal of Economics, Feb. 1927.

25. Shephedrd, G.S., op. cit.,p.107

The majority of changes in supply and demand occur in an uncorrelated manner, owing to independent factors operating from each side. Such changes have been sorted out and analysed most successfully with the method of multiple correlation analysis.

SEASONAL CYCLES : Apart from irregular annual variations, agriculture all over the world is characterised be seasonal price variations corresponding to the seasonal character of its supply. These variations are just the markets' device of adjusting demand to the changing elasticity of supply from one harvest to another within the span of a season. Prices of most agricultural products exhibit a cycle movement within the season rising from a low price point during the weeks of heaviest market receipts to a high price peak later in the season when supplies are at their lowest.

The qualitative relationship between the price and the quantity marketed is not so complicated here as in irregular annual variations. Generally, the range of the price variation is about equal to the extra cost of producing the commodity "off-season", or in the case of annual crops, it is equal to the cost of storage from harvest time until later in the season.[26]

The main problem, on the other hand, is to analyse the quantitative relationships which may not be regular, in the sense that there need be no proportional quantitative relationship between prices and produce markets as seen in a seasonal time-chart. Prof. Ezekiel points out that seasonal variations may be influenced by differences in the supply and demand situation and also by the magnitude of the crop of the year.[27]

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26. Ibid., p.50

27. Social Science Research Council,Research in Prices of Farm Products (Ed. J.D. Black), (New York, SSRC, 1933) p. 59.

Shepherd suggests the following simple method to find out the index of average seasonal variations and also the index of irregularity for each month. Monthly data over a fairly long period may be assembled, and the average price for each month may be computed to eliminate most of the non-seasonal variations. The irregularity in individual years be measured by computing the average deviation of the percentage of the trend for individual months about the value of the index of average seasonal variation for each month. This, he says, may be called the "index irregularity".[28]

PRODUCTION AND PRICE CYCLES : The time lag between the stimulus of price change and the response of supply has resulted in characteristic production and price swings which appear to be chronic and self-energising in products like hogs, beef-cattle, sheep, apples and potatoes. The recurring nature of these cycles is due to the fact that, whereas price is determined by current supply and demand, supply is always determined by the previous season's price. Hence, a maladjustment between supply and demand once begun may perpetuate itself without any tendency to return to the original equilibrium.

The sequence of events characteristic of these cycles is given a generalised explanation known as the cob-web theorem.[29] Given the time-lag between the price stimulus and the response of supply, price and the production may fluctuate around the equilibrium, the nature of fluctuations depending upon the ratio between the elasticities of demand and supply. The length of these cycles depends upon the time taken for the adjustment of output to prices. The actual cycles may take more than a season for the effect of prices to be reflected in output. Thus, the production and prices of beef-cattle in the U.S. are said to fluctuate in a converging series of four years period cycles.

28. Shepherd, G.S. op., cit. p. 50

29. Ibid, pp. 32-36.

Here again, the regularity of the cycle may be affected by irregular external forces like crop disasters or gluts.[30]

TRADE CYCLES : The seasonal cycles and the production and price cycles are directly connected with certain obvious production-characteristics of agriculture. They do not, therefore, constitute a serious theoretical problem.

On the other hand a much more controversial problem has been found in the theoretical relationship between agricultural fluctuations and the recurring fluctuations in aggregate production, income and employment, associated with trade cycles. The differences of opinion in this respect may be, as Haberler observes, "Symptomatic of a fundamental disagreement as to the channels by which the influence of agricultural fluctuations is brought to bear on other departments of economic life."[31]

The key to this problem as it effects policies in the high instability of agricultural incomes resulting from it. In countries where the industrial sector is not predominant, the magnitude of this problem may not be large enough to deserve special attention except in times of world wide depression. However, in countries like the U.S.A. with a predominant industrial sector co-existing with a fairly large agricultural sector, the cyclical problem in agriculture is bound to be a mainspring of policy as it has been ever since the thirties.

THE BEHAVIOUR OF AGRICULTURAL PRICE DURING THE CYCLE : Whatever be the exact casual factors behind the trade cycle, it is generally agreed that so far as the actual course of the cycle is concerned agriculture is a relatively passive sector. The expansion and

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30. Ibid, p. 41-42.

31. Haberler,G.,Prosperity and Depression, (Geneva,League of Nations, 1941), p. 154.

contraction processes in a business cycle operate through a reciprocal causation between monetary demand and productive activity.[32]

Production in agriculture is generally so unimpressive to money incentives, that the trade cycle is often regarded as confined to industry so far as production is concerned. On the other hand, the effects of fluctuations in money demand and industrial activity are concentrated on the demand and costs of agricultural products, causing unusual instability in agricultural prices and incomes. Thus the cyclical adjustments in agriculture operate more through prices and income than through production and employment. Poverty in agriculture becomes the counterpart of unemployment in manufactures.[33] Considering the net effect of the cycle on agricultural prices, its actual magnitude is the combined result of changes in demand and costs due to the cycle.

EFFECT ON DEMAND : It is likely that only a small part of the general rise in money demand would be passed on to agriculture because the demand for agricultural goods is relatively stable, and further because the income-elasticity of food-consumption may actually fall at higher levels of income for rich countries. In relatively poor countries like India, the income elasticity of expenditure for food would be very high and may actually increase with rising money incomes in industry. But the aggregate effect on consumption would be smaller to the extent that the industrial sector is a smaller portion of the economy.

Given a cyclical change in demand for agricultural products, its final effect on agricultural prices will be further aggravated by the fundamental price-inelasticity of demand for agricultural products. Here again, the change in price may be dampened if the income effect of

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32. Ibid, p. 156

33. Thomas Edgar, An Introduction to Agricultural Economics.

the price change is considerable as in the case of a community where food constitutes a major proprotion of the faimly expenditure. The income effect in such cases is bound to exert its influence on demand and price changes especially in the upswing of the cycle.

INELASTICITY OF SUPPLY : There is, however, no such ambiguity attaching to the effect of agricultural supply on prices during the cycle. The inelasticity of agricultural supply is a worldwide phenomenon.League of Nations investigations indicate that the insensitiveness of agricultural output to price changes is a fairly feature of farm production.[34] Measuring the elasticity of supply for food from historical price-quantity data for the U.S.A., W.W. Cochrane found that the supply schedule was almost vertical in the main periods considered by him during 1912-46.[35] Agricultural Supply is scarcely affected by the business cycle virus.

EFFECT ON COSTS : The final change in price would be still higher, if changes in costs also enter into the picture. The cost items of agriculture are mostly agricultural in origin and are therefore not affected by industiral fluctuations. But industry may compete with agriculture to some extent, and herein fluctuations in the non-agricultural sector may affect costs in the agricultural sector. Prf. Schultz distinguishes three ways in which an expansion of production and employment in the non-agricultural sector may influence costs iln agriculture.[36]

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34. League of Nations, Economic Stability in the Post-War Period, (Washington, Lon, 1945), p. 76.

35. W.W. Cochrane, Farm Price Gyrations, An Aggregative Hypothesis, op. Cit.

36. Schultz.,T.W., Production and Welfare of Agriculture, op.cit.,pp.118-25.

Firstly, there may arise what we call an "income-effect" on costs, because changes in effective demand may vary the pattern of production in agriculture and hence costs. Secondly, costs may change because of changes in the prices of non-agricultural products used for agricultural prodduction. This may lead to a spiral of wage-price inflation where production in the non-agricultural sector is faced with rising costs. Thirdly, in many countries there is a tendency for labour to be drained off from agriculture to during industry boom periods, causing higher wages in agriculture. And this, according to Prof. Schultz has the strongest incidence on agricultural costs.

THE "AGRICULTURAL" THEORY OF THE TRADE CYCLE : From the foregoing facts it would appear that agriculture plays a very passive and submissive role in the business cycle. That is, in fact the view held by economists like Prof. A. Hansen[37] and J.M. Clark[38] with regard to the entire causal relationship between agricultural fluctuations and the business cycle. According to Prof. Hansen, agriculture is the "football of business."

There is, however, another school of thought which attributes an active role to fluctuations within agriculture with regard to the operation of the business cycle. Strictly speaking, two conditions must be fulfilled before any such "agricultural" origin of the business cycle can be formulated in theory. Firstly, the agricultural forces to which the business cycle is attributed must be spontaneous and independent of the business cycle. Secondly, they must be cyclical in character.[39]

The seasonal condition cannot be strictly fulfilled. One group of theories which includes the writings of W.S. Jevons, H.S. Jevons and

37. A. Hansen, " The Business Cycle in its Relation to Agriculture," JFE, 1932.

38. J. M. Clark, Strategic Factors in the Business Cycle.

39. Ibid., p.

H.L. Moore tries to explain business cycles in terms of harvest cycles affecting the supply of agricultural products periodically. But there is no agreement between these writers as to the exact period of harvest cycles.[40] Crop fluctuations of individual commodities may often offset each other. The hypothesis of any periodicity in crop variations is mostly untenable.

On the other hand, it is conceptually tenable, as Haberler points out, to consider spontaneous irregulr fluctuations in agricultural supply to be one of the many irregular events like wars, inventions and earthquakes which may start or reinforce a cumulative process of expansion or contraction.[41]

But the actual influence of such spontaneous stimulant on the economic system depends upon the behaviour of aggregate magnitudes like Savings, Investment, Consumer's money demand and the credit structure of the economy which together operate the cycle.[42] There is no given and fixed relation between these monetary aggregates and spontaneous variations in harvest. As forces may be released which pull in opposite directions, Haberler concludes, analysis cannot settle the question, without estimates of the quantitative importance of the different factors in a specific instance.

A similar view, as above, regarding the agricultural origin of the cycle has been put forward, with reference to the depression of 1929. It has been agreed that the depression was started not by good harvests, but by over production in agriculture leading to low agricultural prices and farm incomes. Farmers had less to spend, and therefore industrial producers also received less. The latter, therefore, bought still less from farmers and the depression proceeded in a spiral.

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40. Ibid., p.152.

41. Ibid., p.153.

It is, of course, true that there was a downturn in agriculture preceeding the crash of 1929. The prices of wheat and sugar specially fell towards the close of Nineteen-twenties. The following figures of the U.S.D.A. Abstracts of Agricultural Statistics, 1945, show the general position.

	1925	1926	1927	1928	1929
Prices paid by Farmers	156	155	153	155	154
Prices received by Farmers	156	146	142	151	149
Prices of food grains	171	152	135	128	116

But as Arthur Lewis points out in his"Economic Survey" of the inter-war period, the fall in agricultural prices could not, be itself, have initiated the slump.[43] For one thing, the slump started in the U.S.A. and there the average prices received by farmers did not fall very much in comparison with their payments; at any rate, their income could not have fallen so much as to create the slump. For another, fall in the income of farmers implied an increase in the income of non-farmers and that there is no evidence to suggest that this latter increase was not spent on other goods in any country.

Probably, better light will be thrown on the causal relationship between agricultural prices and the 1929 breakdown, if we consider the same in the context of international trade. Here, as Prof. Henderson points out, countries like Argentina, Brazil, most of the South American Communities, Australia, New Zealand, and the East European Countries, all of which specialised in the production of agricultural commodities were the first to undergo an exchange cirsis."Their exchange difficulties were a consequence of the abnormally heavy fall of agricultural prices which market the onset of the world depression. This served to demage the balance of payments of countries whose

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43. W. Lewis Arthur, Economic Survey 1919-39 (London, OUP, 1949), pp. 46-47

exports consisted mainly of agricultural products and led inevitably in many cases to exchange depreciation and financial default."[44]

But the "heavy fall of agricultural prices" in the world economy was itself, it would appear, the result of a slump in business expectations and investment. The proper conclusion would be as held by Arthur Lewis, that "the relevance of falling agricultural prices was not in initiating the slump but in aggravating it, when it came. When once the slump had started, the collapse of agricultural prices, the insolvency of the rural banks and the burden of rural debt all proved to be highly deflationary."[45]

Thus, it is not ultimately possible to establish any settled relationship between fluctuations in agriculture and those of the business cycle.The peculiar nature of the business cycle consists in an alternation of periods of boom and depression, and this, according to Haberler, is inherent in the characteistic of an individualists money-price economy.[46] Even where external disturbances such as wars, earthquakes and agricultural over-production may count, they operate because of the peculiar response of the economic system.[47]

THE SECULAR TREND : The heavy fall in agricultural prices during the great depression was, no doubt, an important factor which added to the severity of the depression.This fall was not merely part of the depression, but also the outcome of a secular maladjustment between agricultural supply and demand in the world market owing to the "persistent excess capacity in many branches of world agriculture."[48]

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44. Henderson, H.D., Inter-war years and other paper, (London, OUP, 1955), p.253.

45. Lewis Arthur, op. cit., p.46.

46. Haberler, G., op. cit., p. 276.

47. Ibid, p. 368.

48. Henderson, H.D., op. cit., pp. 253 & 137-42.

which was evident even in the nineteen twenties. This phenomenon has led to the study of the agricultural economic problem with a long-run or 'secular' view.

Prof. Schultz who makes a strong plea for the reorientation of agricultural studies in this direction, view the secular problem in agriculture as one which has chronically depressed agricultural incomes as well as prices ever since the first world-war.[49] This, according to him, the "slowly growing structural changes of a developing economy after agriculture," not only in the American economy but in other countries as well. But he formulates the problems mainly as typified by developed countries like the U.S.A., U.K. and Canada.

The broad outlilnes of his arguments are as follows.[50] Given an optimum distribution of resources and a secular growth of the national product due to accumulation of capital and technical progress, the terms of trade for any sector of the economy depends upon the relative secular growth of supply and demand for its products.The rate of expansion of the demand for farm products depends upon changes in population, income-elasticity of demand for farm products, changes in consumer's tastes, advances in the knowledge of nutrition etc. The rate of expansion of supply depends primarily upon advances in technology, improvements in the skill and efficiency of the people and investment and disinvestment in agriculture. In a country like the U.S.A. where population growth has declined, income-elasticity of demand for farm products becomes the key stone of demand-growth, the lesser determinants being changes in tastes etc. On the side of supply, technclogical developments are the foremost. Studies of per capita expenditure for food with the growth of national income since 1879, and

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49. Schultz, T.W. Agriculture in an unstable economy, (New York, McGraw Hill, 1945) , pp. 28, 48.

50. Ibid., pp. 50-74, 81.

of family budgets in the U.S.A., reveal that the income-elasticity of demand for farm products is very low, and also that it decreases with further rise in income. Schultz estimates the income-elasticity of demand for farm products at 0.25 for the U.S.A. On the other hand, the secular trend in agricultural supply has been upward, because of technological improvements.The major consequence for agriculture is, therefore, a falling terms of trade with other sectors of the economy, and a falling level of per capita income in case the other sector of the economy do not absorb the excess supply of labour and other resources in agriculture.

Prof. Schultz's analysis of the secular trend, does not imply any universal trend in the terms of trade for agriculture, applicable to every country.The trend in a particular country depends upon the relative growth of demand and supply as between agriculture and other sectors of the economy.

INCOME ELASTICITY OF DEMAND : So far as the relative demand for agricultural products is concerned, it would appear that in countries like U.S.A. and Canada, it is on the downward direction, mainly due to the falling income-elasticity of demand for agricultural products. Income-elasticity of demand for agricultural products as defined by Schultz[51] is the ratio between the relative increase in the consumption for farm products and the relative increase in income with other factors remaining constsant. This coefficient is observed to decrease-- especially for food consumption, - with increase in per capita income. In other words, Engel's law is seen operating on a national level.Engel's law stated in 1857 :" The poorer is family, the greater is the proportion of the total outgo which must be used for food."

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51. Ibid., p. 51.

Dr. Ojala, in pioneering analysis of the growth of agriculture in the context of economic progress since 1869, observes that Engel's Law is applicable to the consumption pattern of possibly 90 per cent of the economically progressive countries which secure food sufficient for existence and comfort.[52] Dr. Ojala substantiates this view with evidences from "cross-section studies of food consumption by income,levels under conditions of rising economic welfare in three countries - namely U.S.A. U.K. and Sweden. The following figures from the National Resources Committee[53] are representative of the trend :

TABLE - 6.1

INCOME-ELASTICITIES OF EXPENDITURE ON 'FOOD' BY FAMILIES BY INCOME-LEVELS : 1935 - 36.

Income-range (dollars per year)	Income-Elasticity
Under 1000	0.60
1000-1500	0.58
1500-3000	0.51
3000-4000	0.52
4000-10000	0.45
10000-15000	0.36

PRODUCTIVITY IN AGRICULTURE : On the basis simply of the foregoing demand considerations it would be expected that the prices of farm products should have fallen in relation to the prices of other goods, the terms of trade turning against agriculture. But the final consequence for the terms of trade depends upon factors affecting supply also-mainly productivity of agriculture.

52. OJALA, e.m., Agriculture and Economic Progress, (London, OUP, 1952), p. 88.

53. Ibid., p. 58.

Contrary to expectations, the prices of farm products in the three countries U.S., U.K. and Sweden, rose, relative to the prices of all commodities.[54] In the U.S.A. for instance, index of farm prices prepared by Stranss and Bean for 1869-1937 showed that the purchasing power of farm products in terms of all commodities increased by approximately, 25 per cent between 1869 and 1910-14. Dr. Ojala cites similar figures for the U.K. and Sweden.[55]

This relative rise in the prices of farm products cannot be explained either by monopolistic practices among farmers of by a rise in the level of farm wages. Agriculture is unanimously claimed to be the most competitive of industries. The supply of farm labour is generally immobile, and accept a low-wage level in relation to the non-agricultural labour force. In fact, farm labour is claimed to have tended to vary inversely with price-changes in the U.S.A. during 1910-45.[56]

Dr. Ojala traces the phenomenon to relatively higher costs in the development of agricultural supplies than of other supplies demanded by the community. Prices rose relatively in agriculture, because supplies adequate to meet the rising demand were forthcoming only at steadily increasing relative costs. In other words, productivity developments in agriculture as a whole did not keep pace with advance in the commodity producing industries taken together.[57]

This implication is testified to be evidence available. Black states that in U.S. output per worker in agriculture between 1869 and 1937 increased at the rate of 2.1 per cent year, while in the manufacturing

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54. Ibid., P. 46.

55. Ibid., p.48 and 54-60.

56. Schultz, T.W. Agriculture in an unstable Economy, op. cit., p.90.

57. Ojala, E.M., op cit., p. 151.

over the same period it rose at the rate of 3.9 percent per year.[58] In Sweeden, output per worker rose from 100 to 247 for agriculture and forestry, and from 100 to 322 for manufacturing and mining during 1861-1930. Similar was the trend in the U.K.

Consequently, there appears to be inverse relationship between the relative growth of productivity in agriculture and the relative level of agricultural prices in the long-run, provided demand factors are not disposed to the contrary effect.This relationship is more emphatically established. When it is found that there have been period of significant exception to the relative rise of agricultural prices, and that in all such perinds productivity in agriculture move faster. Thus, for instance, productivity in agriculture in U.K. was relatively rising during 1880-1910 with a corrersponding fall in the terms of trade was sharp in the nineteen-twenties when productivity rose rapidly both in U.K. and the U.S.A.[59]

THE CASE OF UNDERDEVELOPED COUNTRIES : The secular trend, as formulated with reference to economies like the U.S.A., U.K. and Sweden, would not apply to the supply and demand pattern obtaining in less developed countries.

Prof.Schultz himself, lays out a frame work for three types of secular supply-demand patterns for agriculture.[60]

1. An equal increase in both demand and supply, which involves on long-run "farm problem". 2. An unequal expansion in which demand pushes hard against supply and 3. An unequal growth in which supply outdistances demand.

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58. Ibid, p. 153-7.

59. Ibid., p. 158

60. Schultz, T.W. op., cit. p. 45-9

Among these types, only the third applied to the richer countries. The second type in which demand pushes hard against supply prevailed in the west during the times of Malthus and Ricardo, and now prevails in countries like China and India. Schultz holds that this situation arises primarily because of over-population in relation to land supply.

Besides, the income-elasticity of food expenditure as envisaged by Engels would not be applicable to poor countries. It may apply only to a particular range of incomes. As regards levels of income which are just above the subsistence level, the income-elasticity may be very high and may increase with income higher atleast for a period.[61]

On the other hand, agricultural productivity in these countries may be lagging far behind the other sectors of the economy because of neglect of economic development and the consequent structural mal-adjustment between agriculture and the non-agricultural sector.

EFFECT OF INTERNATIONAL SPECIALISATION : It is not, as yet possible from what was said above with regard to particular countries, to arrive at a final picture regarding the secular trend in the movement of terms of trade for agriculture. Farm prices are affected by world trade, and the terms of trade for farm products at any given time is the combined result of the relative demand and supply positions of agricultural products in the internal as well as the world market, provided international equilibrium is maintained.

Summing up his discussion of the prespective of international trade in the inter-war period, Prof. Lewis explains why the terms of trade steadily moved in favour of agriculture in the world-market almost throughout the nineteenth century.[62] In the nineteenth century, the long-run international equilibrium in industry and agriculture could be

61. Ojala, E.M., op. cit., p. 89.

62. Lewis, W. Arthur., op. cit., p. 194.

maintained with manufacturers growing at a cumulative rate of 4 per cent per annum, and primary commodities at a rate of 3 per cent. After the first world-war international demand for agricultural products slackened with the fall in the growth of population in the western countries, and the term of trade went definately against agriculture with relatively large growth of productivity in many branches of world agriculture. An international specialisation in industry in the inter-war period did not keep pace with the world market for agricultural products was left too insecure until it actually broke down in the thirties.

The further terms of trade for agriculture in the world market depends on the one hand, on the rate of industrialisation of new countries, and on the other hand on the growth of productivity in world-agriculture. While some expect a relatively rapid increase in agricultural productivity with terms of trade moving against it, others expdect a substantially favourable terms of trade with the rapid industrialisation of eastern Europe, China and India, and with successful employment policies making for high levels of manufacturing output and a sustained internal demand for farm product in advanced countries.[63]

MARKET FACTORS : The demand & supply forces which manifest themselves in successive transactions are focussed upon the pricing system through the market mechanism. It is quite likely that the peculiarities of markets may exert their own influence on the pricing process.

Though the market process is not peculiar to agriculture, there are certain market phenomena which specially apply to agriculture and hence to the determination of agricultural prices. We may distinguish them

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63. Ibid., p. 192.

under two categories. On the one hand, the distributive process in agriculture, unlike in industry is scattered between a member of separate units geographically as well functionally, rendering agricultural prices into what the U.S. National Resources Committee has called "the market-dominated prices" is distinguished from the "administration-dominated prices of industry."[64] On the other hand, the efficiency of the marketing system in channelling the distribution of goods may be restricted by conditions peculiar to agriculture. Under the first category falls the widely known problem of margins and spreads connected with agricultural prices. The second category leads on to the problem of competition in agricultural markets.

MARGINS AND SPREADS : The demand for farm products as it facss the farmer is the derived demand of the distribution and not the final demand of the consumers. As such, the "farm price" of a product is usually only a part of its price to consumers, the other part being the reward paid to the distributors anda processors.

The distributive process can, therefore, be thought of in terms of series of markets-relating to country purchasers, wholesale receivers etc. in each of which there is a set of supply and demand forces more or less special to that market. The spread on the margin between the final consumer's price and the farm price is determined by the demand and supply for the distributive series. The farm price and the margin are related, however, because the consumer's demand for the final product is a demand both for the services of the various middlemen and the output of the primary producers.[65] But there is no economic ground upon which to expect the margin to be fixed on to be in constant proportion to the farm price even under normal conditions.

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64. Shepherd, G.S., op. cit p. 30.

65. Cassels, J.M., Research in Prices of Farm Products, Ed. J.D. Black p.219.

Nevertheless, in practice it is found that the middle-men's margin are fairly rigid and inflexible in relation to movements in farm-prices except during spectacular economic changes such as a war or major depression. The consequence for farm prices, in this instance is to lower the elasticity of demand facing the farmer as in relation to the final consumer's elasticity of demand. The formal proof of this phenomenon, as given by Stigler is as follows :[66]

Supposing the consumer's price = p

and quantity demanded = q

and merchants margin = K (a constant)

Then consumer's elasticity of demand $= \frac{p.dq}{q \quad dp}$

Merchants elasticity of demand $= \frac{p - k.dq}{q \quad dp}$

(. . d (p-k) = dp)

This is lower than consumer's elasticity of demand

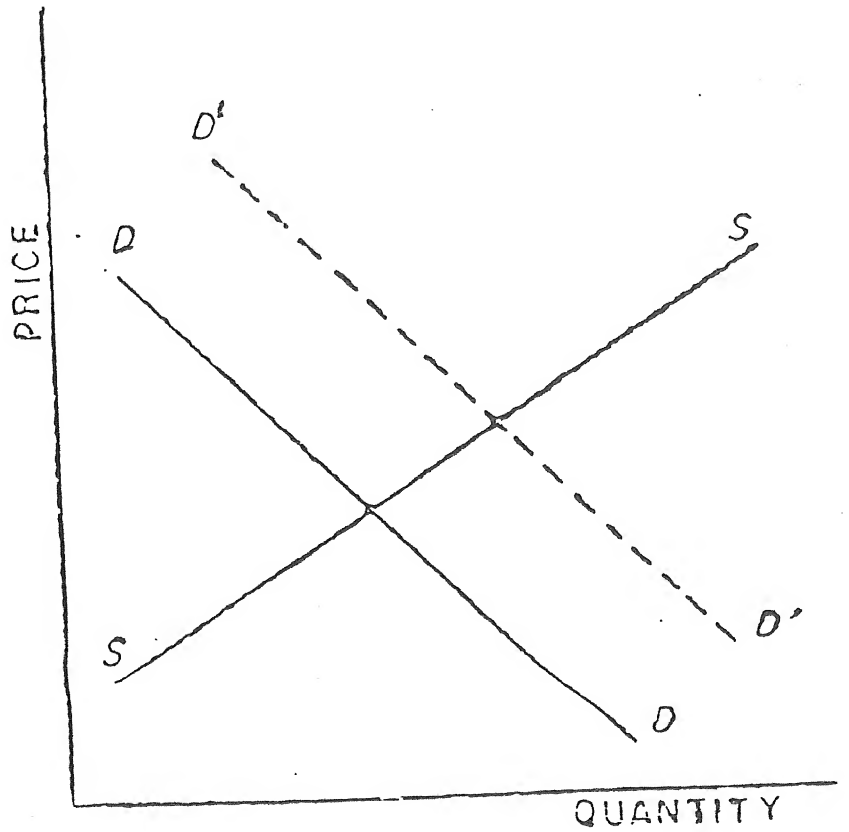
by $\frac{K.\ dq}{q \quad dp}$

As a result, a given percentage reduction in the farm price will cause a much smaller percentage in the final consumer's price; and a given changes in demand will cause a more proportionate change in the farmer's price than in that of the consumer.

A change in the distributor's margin will be distributed between the producer and the consumer in accorrdance with the forces working in the market for each. It affects the middle man's demand curve in the producer's market: the middlemen's supply curve in the consumer's market. A decrease in the margin will shift down-ward the supply curve of the middlemen in the consumer's market, and shift upward the demand curve in the producer's market. The price changes in the two markets

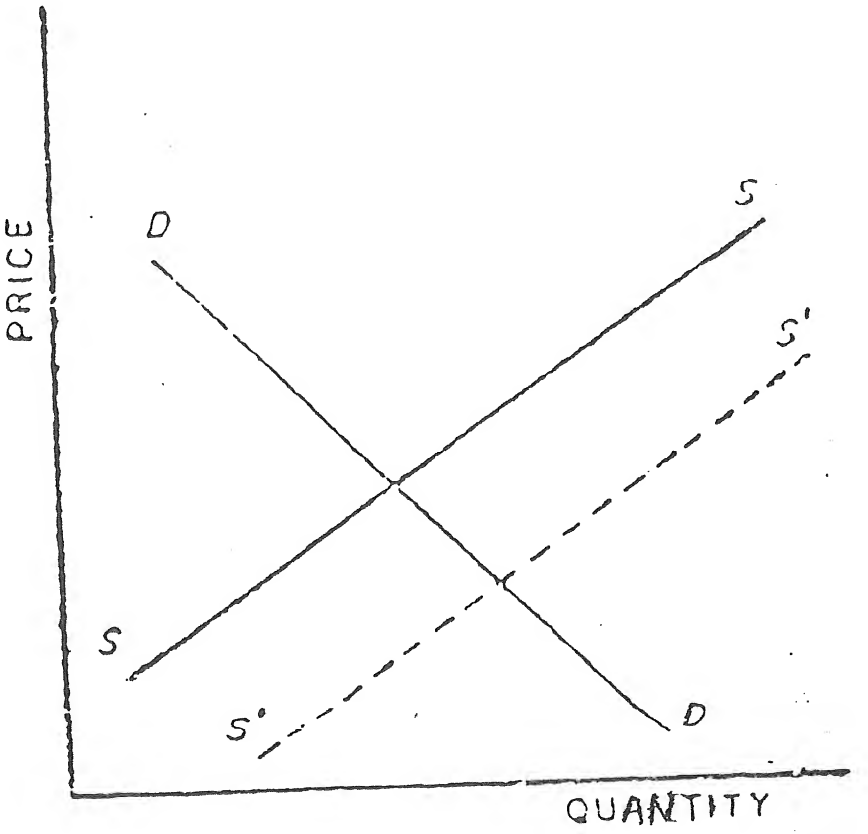
66. Ibid

Fig. 6.1



PRODUCER'S MARKET

Fig. 6.2



CONSUMER'S MARKET

together will be equal to the decrease in the margin. The actual ratio in which the decrease is divided between the consumer and the producer will depend upon the relative elasticities of consumer's demand and producer's supply in their repective markets. The whomsoever's curve is more elastic, he will get a smaller share in the division,[67] as shown in figure 6.1 and 6.2.

EFFICIENCY OF THE MARKETING MECHANISM : The pricing system is said to be efficient when it secured allocation of resources and distribution of goods and services in such a way as to mixiмise consumer's satisfaction on the one hand and minimise costs on the other,. However, the efficiency of the pricing system in this respect depends upon the existence of conditions of competitive equilibrium in the market.

COMPETITION WITHIN AGRICULTURE : It is generally agreed that farmers are the most competitive of producers. But the agricultural market is affected by conditions of competition not only in the hands of farmers but also in the hands of middlemen, manufacturers, transport agencies and in the hands of consumers.

The monopolistic influences which have actually had the greatest effect on agricultural prices are those which have operated at various points along the channels of distribution. Farmers and consumers are many. Dealers or processors are relatively few in any given market. Thus, dealers are likely to exert monopolistic influence in their purchases from the farmers or in their sale to the consumers.

So far as the sale to the consumers is concerned the merchants are faced with a falling sales curve and with a rising supply curve because agriculture is generally an increasing-costs industry. The equilibrium

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67. Shepherd, G.S. op., cit p. 210.

68. Gibs, B.D., Agriculture and Price Mechanism, op. cit., p.190.

output is therefore likely to be less than the social optimum of welfare economics.[68]

There are also cases of monopolistic action on the part of dealers in the purchase of farm products. The " Big Four " meat packing firms in the U.S.A. maintained an almost constant ratio between their purchases for five terminal markets for several commodities.[69]

On the other hand, farm prices may be further distorted by monopolistic rates of distributor's margin. But as Gibs suggests, an excessive margin might not result in any distributor earning abnormally high profits; there might be too many firms in the distributive trades, none of which are large enough to obtain all the economics of scale.[70] In other words, we have here an instance of excess capacity leading to excessive costs. In the U.S.A. between 1900-40 the number of gainful workers employed in distribution is said to have increased 160 per cent and the number employed in production only 40 per cent.[71] Reduction in their number may lead to restrictive practices, and in the absence of other remedies, the margins can be reduced only by restricting the number by licences and fixing the margin by decree, or through administered prices.

A much more important factor which renders the agricultural market highly imperfect in backward countries is the lack of knowledge among farmers about price-differences and about the use of grades for different types of a commodity. The wastes involed herein may be avoided through the establishment of producer's co-operatives for providing better knowledge and facilties of marketing.

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69. Ibid, p. 190

70. Ibid., p.191.

71. Blake, J.D. and Kiefer, Future of Food and Agricultural Policy, (New York, McGraw Hill, 1948), p. 155.

COMPETITION BETWEEN AGRICULTURE AND INDUSTRY : Apart from malallocation of resources within agriculture, the efficiency of the market economy further requires that resources may be properly allocated as between agriculture and other sectors of the economy.

Herein Prof. Schultz in the course of his analysis of the long-run problem of agriculture, puts forward the thesis that since 1910-14, wide fluctuations in the aggregate of an economy have rendered the market economy in agriculture inefficiant in respect of allocating resources between agriculture and other sectors.[72] Prof. Schultz builds his stand-point mainly with regard to the proportion of labour in agriculture in the U.S., which according to him is much longer than is economically justified. In other words, he assumes that the marginal private and social net product of labour in agriculture is lower than in other sectors of the economy; and the real national income as well as the per capita income in agriculture would increase with the transfer of labour to other sectors of the economy.[73]

Prof. Schultz's thesis has been adversely criticized so far as it applies to the American economy.[74] Firstly, it has been pointed out that perfect competition does not require equal earnings between employments. Only equality of net advantages is required. Secondly, the disparity between earnings in agriculture and industry would be less spectacular if seen against the background of unemployment in industry and in the payments in kind to farm workers. A more fundamental point for doubt arises, when, as suggested by Gibs, it is remembered that the classical theory of distribution of resources is fully applicable only

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72. Schultz, T.W., Production and Welfare of Agriculture, op. cit.p.75.

73. Gibs, B.D. Agriculture and the Price Mechanism, op. cit p. 192.

74. Ibid., p. 194.

in conditions of full employment.[75] No doubt, net migration of labour from agriculture is a secular trend in economic progress. But there is no evidence in advanced countries to prove that the pricing system has obstructed such migration. On the contrary, labour moved out of agriculture when there was prosperity in other sectors, and the movement was reversed only when there was nation-wide depression. Hence the problem of "transfer" from agriculture may possibly disappear with the achievement of a permanent full employment policy.

But the problem is certainly evident and even serious in underdeveloped countries which are faced with structural handicaps in transferring excess supply of labour from agriculture to other sectors of employment. Low level of education and health, administrative inefficiency, limited domestic resources and technical knowledge largely limit the capacity of under developed countries to absorb capital quickly for productive purposes. If, in addition, the country is primarily agricultural dependent largely on a single crop for export, and does not have the facilities to industrialise, the situation becomes worse unless international movements of goods are very freely permitted. In the words of **Prof.Schultz:** "countries of this type are caught in an international technological squeeze."[76]

REGIONAL PRICE VARIATIONS : Regional price variations result from the fact that many nationally traded commodities are sold at decentralised markets which cover large areas of geographical surface. The mere difference in prices between one market and another for a commodity cannot be taken for a regional price variation. Such differentials might include general marketing features which cannot be strictly accounted for by regional causes.

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75. Ibid., p. 195.

76. Schultz, T.W., Production and Welfare in Agriculture, op. cit, p.93

But there are a good number of regional factors which give rise to a structure of price-differentials between regions. Shepherd shows how these variations may be represented by a geographical price-surface-map wherein iso-price lines connecting approximately equal prices like contour lines on a topographical map.[77] The differences over regions may be traceable to special factors-such as transport rates, differences in storage facilities, transit privileges, accessibility to domestic and export markets.[78]

This problem applies particularly to countries like India where due to institutional factors, the markets for many commodities are not nationally integrated sufficiently well.

But the structure of regional differentials is not fixed in any way.[79] It may change from year to year with changing conditions of supply and marketing over the regions of an economy.

CONCLUSION : In this chapter, a survey of literature on agricultural prices has been made. The survey has been shown that prices of the agricultural commodities (foodgrains included) are in fact influenced by variations in the demand for and supply of these commodities. Based on these theoretical developments, the next chapter empirically studies the foodgrains prices in India, their trends and determinants for the purpose of identifying relevant areas for policy formulation.

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77. Shepherd, G.S. Agricultural Price Analysis, op. cit p. 204.

78. Green, R.G., Research in Prices of Farm Products Ed. J.D.Black, pp. 208-212.

79. Ibid., p. 302.

CHAPTER - VII

FOODGRAINS PRICES IN INDIA
THEIR EMERGING TRENDS AND DETERMINANTS

CHAPTER - VII

FOODGRAINS PRICES IN INDIA

THEIR EMERGING TRENDS AND DETERMINANTS

The theory of price determination, enables analysis of the effectiveness or otherwise of various microeconomic policies, like price control policies, distribution and stabilisation policies. The theory is quite relevant to an analysis of the problems associated with agricultural products and markets. The price and production fluctuations in the agricultural sector are very common all over the world. These changes have serious implications for other sectors as well, for the agricultural sector supplies to the economy its food and raw material requirements. Therefore, there is a need for exercising effective control over the agricultural production and prices, in such a way as to suit the overall economic objectives of a country.

Lipsey and Steiner, in their analysis of farm problem have categorized sources of the farm problem into three categories. They are, (i) short term fluctuations due to uncontrollable variations in supply; (ii) cyclical fluctuations due to variations in demand as the economy expands and contracts; and (iii) long-term trends in both demand and supply due to economic growth.

Short-term fluctuations of prices are typical of many agricultural markets. These are due to variations in agricultural outputs.The outputs themselves are influenced by various factors that are beyond the control of farmers. Consequently, the output realized by the farmers at the harvest may be far in excess or short of the planned levels of outputs. These unplanned and unexpected fluctuations in output cause fluctuations in the prices of agricultural products. A bumper crop leads to reduction in the prices and a lean crop pushes the prices upwards. The extent of change in price will depend upon the price elasticity of demand. Because many agricultural products have

inelastic demands, fluctuations in their tend prices to be large in response to unplanned or unexpected changes in production.These changes have an impact on the incomes of the farmers. If the demand for a particular product is price elastic the total receipts of the farmers of the product vary directly with the quantity supplied. If the demand is price inelastic, the total receipts of the farmers will vary inversely with the quantity supplied. Thus, under conditions of price-inelasticity of demand, which are prevalent in the case of most agricultural commodities, good harvests lead to reduction in total receipts of the farmers and bad harvests to increases. When nature is bountiful and produces a bumper crop, farmers' receipts dwindle, when nature is moderately unkind and output falls unexpectedly, their receipts rise. The interests of the farmer and the consumer are exactly opposed in such cases. This conflict is dramatically illustrated every time a partial crop failure sends food prices soaring but raises farm incomes, and whenever a bumper crop that brings relief to consumers nevertheless evoked a cry for help from the farm belt, where incomes are shrinking. Similar is the experience in India.

Cyclical fluctuations in prices and incomes of agricultural sector emanate from the ebbs and flows of national prosperity. These cyclical fluctuations in the economy influence the demand for all the commodities. The impact of such fluctuations in the demand for various commodities on their prices depends upon the elasticities of supply of these commodities.While industrial products typically have rather elastic supply curves, agricultural commodities typically have rather inelasatic supply curves. Consequently, the impact of cyclical fluctuations in the demand for products affect these two sets of commodities in two different ways. The cyclical variations in the demand for industrial products result in fairly large changes in their outputs, but only small changes in their prices, since the supply of

industrial products are price-elastic. But in the case of agricultural commodities, the inelastic supply conditions, lead to a meagre increase in farm outputs and a large increase in farm prices. These responses have, in fact, been observed in various capital countries.

These patterns of unregulated markets have been observed and accepted as part of the nature of things in most depressed periods of American economic histroy.They occurred once more in the early 1930s when America, along with the rest of the world, suffered the great depression ever. But in the 1930s the governments attempted to intervene, and since then farm policy has been continuous and active. " To the public (and to many in Congress) the economic plight of farmers during the Great Depression seemed to be caused by the great fall in prices, which was caused by the fall in demand for commodities with an inelastic supply curve. The notion of price parity, the ratio of the prices farmers received for things they sold to the prices they paid for things they bought, was invoked to measure their hardship. As a result programmes were proposed to restore price parity to farmers."

Steady growth over time in the productive capacity and wealth leads to changes both in demand and supply and cause problems to individual sectors. " If productivity is expanding uniformly among industries, the demand for goods with low-income-elasticities will be expanding more slowly than output. In such industries excess supplies will develop, prices and profits wil be depressed, and resources will be induced to move else-where. Exactly the reverse will happen for industries producing goods with high income elasticities. Demand will expand faster than supplies, prices and profits will tend to rise, and resources will move into the industries producing these goods.

The rapid increases in productivity on account of technological improvements increase supplies enormously. The domestic demand for

these goods may not expand so rapidly, thereby leading a situation of supplies being far in excess of demand. Unless international markets for these commodities expand and absorb all the excess supplies on the domestic front, the sector is likely to face a serious depression. Thus, the instability of agricultural prices and incomes is caused not only by short-term and cyclical fluctuations but also by the long-run growth.

Governments all over the world have been attempting to effectively intervene and moderate the instability inherent in the agricultural sector. The agricultural stabilisation programmes of the governments are usually aimed at stabilisation of agricultural prices and incomes in the face of short term and uncontrollable fluctuations in supply and cyclical fluctuations in demand. These policies and programmes also seek to support agricultural prices and incomes at levels sufficient to guarantee farmers what is regarded as reasonable and decent standards of living. These policies themselves lead to long-run problems. The price support policies not only ensure reasonable and decent standards of living for the farming community, but also create disincentives for the excess resources generated by technological progress and improved productivity, to leave the sector. Thus, these policies are likely to aggravate the problem of immobility of excess resources in the long-run.

In free markets, fluctuations in production and supplies of agricultural commodities lead to wide fluctuations in both farm prices and receipts (or incomes). These fluctuations can be prevented by the farm produces only if they jointly undertake to ensure stability of actual supplies to the market. By forming producers' organisation and authorising it to operate in the market on their behalf for the purpose of ensuring price and income stability, the farming community will be able to avoid wide fluctuations in the prices of their products and

incomes. The producers' organisation should be capable of purchasing and storing all the produce from the farmers and release a constant level of supplies to the market. The level of supplies should be maintained at the equilibrium level of output. Thus, during periods of surplus production the organisation has to acquire and store the surpluses and during period of deficit production, stocks should be released to the market. By maintaining a steady stream of supplies at the equilibrium level the organisation would be stabilising the price at the equilibrium level. Since the price level and the quantity sold are kept constant, the total receipts of the producers' organisation and of the farming community would be stabilised. The farmers have to jointly meet the costs of managing the organisation. The costs of storage, organisation and administration of such operations as described above, however, are justifiable, for a successful operation of the above plan may relieve the farmers of the uncertainity and risks they face. However, organising and managing a farmers' organisation that can effectively counter the market trends is extremely difficult, particularly, in such vast and underdeveloped countries like India.

However, in view of the difficulties involved in organising and managing producers' organisation, the governments have been attempting to undertake the responsibility of maintaining stability of farm prices and incomes. If the Government just aims at maintaining price stability, then it may operate in the agricultural markets by purchasing surplus stocks during the periods of relative surplus and storing them and releasing the stocks during periods of scarcity. These operations need to be done at the equilibrium price level. In other words the government should fix the equilibrium price as the support price for its operations. While these operations lead to stabilisation of prices of agricultural commodities, they would not lead to stability of farm revenue fluctuations of a crop with inelastic

demand and a fluctuating suply. Under free market conditions, a bumper crop leads to fall in revenues and incomes, and lean crop leads to rise in revenues and incomes, if the demand happens to be inelastic. However, this pattern would be reversed by the operations of the government to purchase and sell the produce in the market during periods of surpluses and shortages at the equilibrium level of price.

If the objective of the government stabilisation programme is expanded to stability of farm incomes, then the programme should be modified to permit some price instability. "Too much price stability causes receipts to vary directly with production and too little price stability causes receipt to vary directly with production and too little price stability causes receipts to vary inversely with production. If the Government allows prices to vary in inverse proportion to variations in production, then receipts will be stabilised. A 10 per cent rise in production should be met by a 10 per cent fall in price, and a 10 per cent fall in production by a 10 per cent rise in price. To stabilize farmers' receipts, the government must make the demand curve facing the farmers one of unit elasticity. It must buy in periods of high output and sell in periods of low output, but only enough to let prices change in inverse proportion to farmers' output." Thus, to avoid the problem of instability of farm incomes the operations of the government should allow prices to osicillate around the free-market equilibrium level. The extent of these oscillations should be maintained strictly in inverse proportion to the extent of fluctuations in outputs.

However, with a view to not only to stabilise farm prices and incomes but also to assure farmers a standard of living comparable with that of urbanites, governments try to keep the farm prices above the equilibrium level. Stabilisation of prices above the equilibrium level, the quantity supplied to the market by the producers is bound to exceed

the quantity demanded. Either unsold surplus will exist or someone, in this case, the government, must step in and buy the excess production. In the average year there is a surplus, and this results in a situation in which over time the stabilising authority buys more than it sells, so unsold surpluses accumulate. The cost to the tax payers includes any part of the outlay not ultimately recovered by sale of the crop, plus costs of storage, handling and administration.

The American experience in trying to help the politically influential but poor farm populatin, is reported to be corroborating with the theoretical presentation presented in earlier paragraphs. The first attempt of the U.S. Government to intervene in the agricultural markets through Federal Farm Board set up in 1929 lead to the accumulation of enormous stock and a rapid exhaustion of available funds.

The New Deal farm policy under the Roosevelt administration aimed at achieving parity between the incomes of farmers and those of the others. This result was sought to be achieved through legislation on price parity.The programme attempted at avoiding building up of large surpluses by paying farmers not to produce as well as paying them for what they did produce and sold. It also imposed acreage restrictions and marketing quotas on individual farmer. However, subsequent results proved that support prices, guaranteed sales, government financed research, and government banks for farm improvements were an enormous incentive to productivity. Consequently, the total output expanded rapidly in spite of acreage restrictions. The costs of administration of the programme proved to be exhorbitant. Until 1970s, the stabilisation programmes have been followed with minor modifications. During the period 1970-74, the world market came to the rescue of the stabilisatin programme of U.S. The surplus stocks could be disposed of economically. However, during the period 1974-79, the world economy entered the most serious economic recession since 1930s. Although the

buoyant international markets for agricultural products shielded U.S. agricultural sector, the individual farmers still faced problems of maintaining their standards of living.Between 1974 and 1978, the prices paid by farmers rose by 31 per cent while prices received by them rose only by 9 per cent.

Thus the history of stabilisation programme of the U.S., demonstrates that achieving the objectives under these programmes is not an easy task. The programmes at best, can reduce the extent of fluctuations in farm prices and incomes and try to bring about some sort of parity between the agricultural and other prices.

TRENDS IN THE FOODGRAIN PRICES: The prices of foodgrains, have a weight of 12.92 per cent in the construction of general wholesale price index. Further, in a developing economy like India, foodgrains are the primary requirements for the development process. Unless foodgrains are provided to its labour force, it would be extremely difficult to augment and efficiently employ the available labour force in the development process. The productivity of an under-nourished labour force would be extremely low. The foodgrains should, thereforee, be made available to the populace not only in adequate quantity and qualities, but also at prices, at which the labour force would be able to consume nutritionally required quantities of various commodities. At the same time the prices should be remunerative to the farmers producing these commodites, more particularly so in countries where the holdings are very small and the farmers are on the verge of starvation. Therefore, foodgrains production, availability and their prices play an important role in the development of an economy.

The prices of foodgrains play an important role in not only influencing the production decisions of the farmers but also the demand conditions for foodgrains. Unremunerative prices of foodgrains are bound to result in diversification of land and other resources from under foodgrains

production to other agricultural uses, resulting a decline in the output of foodgrains. Similarly, extremely high prices may result in a large segment of the population consuming below the nutritional requirement, thereby leading to ill health and low productivity.

Further, the presence of middlemen in the foodgrains markets aggravates these problems. These middlemen are strong socially, politically and financially. They keep the small agriculturists under constant obligation and coerce them to sell their produce at very low prices. By garnering huge quantities of commodites, they control the prices at which the goods are sold to consumers. Thus, the presence of the middlemen also results in low unremunerative prices being paid to the farmers, and at the same time high exhorbitant prices being charged to the consumers.

Attempts have been made since independence, by the Government of India to intervene in the foodgrains markets for the purpose of ensuring remunerative prices to the producers and for making available foodgrains to the consumers at reasonable prices. In addition to purchasing foodgrains at support prices through the Food Corporation of India, the foodgrains are being distributed at reasonable prices to the consumers through a distribution system. The core objective of the current thesis is to assess the success or otherwise of these programmes in terms of their avowed objectives and to provide policy prescription, if required. Such an attempt should naturally begin by studying the foodgdrains production, demand and prices. The study would take into account, the impact of poliicies and institutional arrangements on the stability of prices, foodgrains production, and incomes of farmers producing foodgdrains.

The prices of foodgrains have been fluctuating from year to year during the last forty years. Although the prices have declined during certain

years compared to their levels during the previous years, a generally increasing trend is clearly discernable. In the Table 7.1, the average level of prices and their coefficients of variations are presented for each one of the last four decades.

During the decade of fifties the average level of wholesale price index of all commodities was above that of the foodgrains. However, the average level of wholesale price index of cereals was slightly more than that of the wholesale price index of all commodities. The average level of wholesale price index of pulses was lowser than that of all commodities by 7.5 per centage points.

TABLE – 7.1

WHOLESALE PRICE INDICES DURING THE LAST FOUR DECADES

(BASE 1970-71 = 100)

Period	Statistics		All Commodities	Foodgrains	Cereals	Pulses
1950-60	$\bar{X}$	(points)	47.0	45.4	47.7	39.5
	S.D.	(points)	3.7	5.4	5.3	7.1
	C.V.	(%)	7.9	11.9	11.1	18.0
1960-70	$\bar{X}$	(points)	73.0	74.6	74.0	76.9
	S.D.	(points)	16.1	23.4	21.9	30.5
	C.V.	(%)	22.1	31.4	29.6	39.7
1970-80	$\bar{X}$	(points)	157.5	151.6	146.4	177.5
	S.D.	(points)	39.6	34.1	31.8	52.9
	C.V.	(%)	25.1	22.5	21.7	29.8
1980-90	$\bar{X}$	(points)	175.7	161.4	155.5	187.6
	S.D.	(points)	40.5	36.7	34.3	57.8
	C.V.	(%)	27.2	25.3	23.4	31.3

* Average Level S.D.: Standard Deviation C.V.: Coefficient of Variation

Compared to the wholesale price index of fodgrains, cereals and pulses, the wholesale price index of all commodities was relatively more stable during the fifties. The wholesale price index of pulses exhibited a greater degree of instability during that period. During the sixties,

the average level of wholesale price index of all commodities reached a level of 73.0 points. The levels of wholesale price indices of foodgrains and cereals were marginally greater than that of the wholesale price index of all commodities. But, the average level of wholesale price index of pulses, which was lower than that of all commodities during the fifties, was more than that of all commodities during this period. During the third decade under review, the increase in the cereal prices was more or less in conformity with the increase in the gereral price level. However, the price index of pulses increased more rapidly, from a position where it was lower than the gereral price index to a position where it is more than the general price index. It would be interesting and useful to identify the factors influencing fluctuations in the prices of foodgrains. Such an identification would be helpful in policy formulation. Since supply of and demand for foodgrains play an important role in the determination of prices, the analysis begins with identification of factors influencing it.

STABILISATION PROGRAMMES AND POLICIES : The Government of India has been endeavouring to maintain stability of price of all commodities. Shortages and surplus of commodities, however, cause price fluctuations. The efforts of the government are directed not only towards minimising these short-term fluctuations but also towards keeping the price increase under control in the long-run. In these attempts, the Government has to ensure that remunerative prices are paid to the producers and reasonable prices are charged to consumers.Stabilisation programmes and policies of the Government should further aim at infusing stability in the incomes of the producers. These problems arise mainly in the case of products of the agricultural sector, which relies heavily on the nature paricularly, the monsoons.

Reviewing the food policy in India, Chopra sums up the details of the policy in India thus, "Food Policy in India can be said to have three main objectivees (1) self-sufficiency in foodgrains product, (2) foodgrains price stability, and (3) assurance of an equitable distribution of what becomes available, at reasonable prices. These broad objectives have held the field, with varying emphasis. of course. almost since 1943. These are intended to safeguard the interest of low-income consumers, in availability as well as in price, and to ensure that producers receive reasonable prices, with an adequate incentive for increasing production.*

The stabilisation authority is expected to buy up stocks during periods of surplus and release them during periods of scarcity to bring about stability in the prices of commodities like the agricultural produce. This has been attempted by various types of food prcurement and distribution efforts by the state and central governments. These efforts are supposeed to bring about greater stability in the price of foodgrains. As analysed earlier in this chapter, the prices of agricultural commodities in general and foodgrains in particular, have exhibited violent fluctuations during the last thirty years, with the exception of period of the 2nd Five Year Plan period. In particular, the prices of pulses have fluctuated more violently than those of cereals. Since, the stabilisation programme are mainly concerned with the cereals, one ,may draw an inference that the relatively less violent fluctuations in the price of cereals are due to the stabilisation programmes. But, the fact remains that the prices of cereals fluctuated more than the prices of the general price level. This indicates that the price stabilisation programmes implemented to stabilise the prices of cereals are yet to succeed fully.

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* R.N. Chopra, Evolution Food Policy lin India (Delhi : Macmillan, 1981), p.15.

It may be noted that during certain years, the prices of cereals have fluctuated very rapidly, in spite of the operations of the government. This may be due to the delayed intervention by the government in the markets as also extreme situation in foodgrains production.

Studying whether the stabilisation policies of the government had any effect on stabilisation of farm incomes would be interesting. Very quick, wide and unexpected fluctuations in prices of farm products may lead to oscillations in the incomes of the farming households and put these households to economic difficulties. These, in turn, may effect fresh farm investments and productivity. Therefore, the price stabilisation policies and programmes should also aim at stabilisation of farm incomes. However for studying the extent of stability in farm incomes,the data on farm incomes are required. Such data is not readily available. Therefore, an attempt is made here to study the extent of stability in farm incomes by studying the extent of stability in the values of groups of farm products. The value of farm products may be considered as the gross farm income. The costs of production have to be deducted from the gross income to arrive at the net farm income. Data on the costs of production are also not readily available. Construction of an index is also a complicated problem. Therefore, the stability of farm incomes has been studied with reference to value indices, arrived by multiplying the index numbers of production by the whole price index numbers. The analysis has been carried out for the entire agricultural production, and the foodgrains group of agricultural commodities.

The average levels of standard deviation and the coefficients of variation of values of production of major categories of agricultural products have been calculated and presented in Table 7.2 for various plan periods. The coefficents of variation indicate the extent of fluctuations in the value of production. It may be noted that the fluctuation in the value of production are quite substantial during

most of the plan periods. Similarly, even among the commodity groups, the instability of values of production appear to be quite marked. The value of production of pulses has been exhibiting greater instability than the other groups of agricultural commodities.

TABLE - 7.2

STABILITY OF VALUE OF PRODUCTION

Period	Commodity Group	Agricultural Production	Foodgrains	Cereals	Pulses
1950-51 to 1955-56	$\bar{X}$ (points)	27.42	28.68	28.83	34.98
	S.D. (points)	1.93	3.65	3.18	5.50
	C.V. (%)	7.04	12.73	11.03	15.72
1956-57 to 1960-61	$\bar{X}$ (points)	36.12	38.10	37.74	43.78
	S.D. (points)	4.99	4.60	4.25	8.11
	C.V. (%)	13.82	12.07	11.26	18.52
1961-62 to 1965-66	$\bar{X}$ (points)	50.30	51.02	49.80	59.69
	S.D. (points)	8.76	10.36	8.74	18.74
	C.V. (%)	17.42	20.31	17.55	31.40
1966-67 to 1968-69	$\bar{X}$ (points)	81.63	90.63	88.43	99.43
	S.D. (points)	31.52	20.74	18.29	40.65
	C.V. (%)	16.56	22.88	20.68	40.88
1969-70 to 1973-74	$\bar{X}$ (points)	120.52	122.30	121.58	118.58
	S.D. (points)	20.82	20.11	18.25	22.40
	C.V. (%)	17.28	16.44	15.01	18.89
1974-75 to 1979-80	$\bar{X}$ (points)	232.30	215.62	214.13	215.87
	S.D. (points)	29.55	22.23	18.19	43.90
	C.V. (%)	12.72	10.31	8.49	20.34
1980-81 to 1984-85	$\bar{X}$ (points)	248.50	232.40	233.50	235.60
	S.D. (points)	30.80	27.50	25.70	42.80
	C.V. (%)	13.60	11.70	10.50	17.80

SOURCE : Based on " Index Numbers of Wholesale Prices of Groups and Sub-groups," published in Basic Statistics Relating to the Indian Economy, Vol. 1 : All India by the Centre for Monitoring Indian Economy, Bombay

The instabiity of gross farm incomes, stems from the variations in agricultural production and prices. The fact that the indices of value of production are tending to be very unstable indicates that the price variations are not in confirmity with variations in production. This may be due to (i) speculaltive pressures built up in the agricultural markets by the traders and (ii) ineffectiveness of the foodgrains procurement and distribution efforts to match these speculative forces. If the hoarding and dehoarding by the speculative forces in the economy are effectively countered by the sales and purchases by the government agencies, greater stability can be infused into the price of the agricultural commodities.

The hoarding and dehoarding operaions of the speculative forces depend upon the agricultural production. However, they are neither intended to nor directed to bring about stability in agricultural prices. If foodgranis are hoarding when they are abundantly available and are dehoarded when they are extremely scarce, then, they tend to bring about stability in price. However, the speculative forces undertake these operations to manipulate the prices in such way that they would be able to purchase and hoard grains when their prices are the lowest and dehoard when the prices are the highest. While direct legal action against these speculative forces may be useful in the short-run, it would be extremely difficult to control these activities in the long-run through such action. So long as these speculative activities are economically lucrative to these forces, they would be indulged in. Therefore, it is necessary to make the speculative activies prohibitively uneconomic. This is possible by widening the operations of the food procurement and distribution operations. These operations should aim at not only stabilising the agricultural prices but also ensure that the speculative forces would not be able to acquire stocks of these commodities. This would be possible only when the food

procurement authorities have a flexible price policy. They shold be able to garner the entire stocks of foodgrains offered in the market and store them, by offering higher prices than the speculative forces.

Further, the procurement and distribution operations have to be matched with the speculative movements taking place in the markets. By carefully monitoring the market situation, the porcurement and distribution authorities should be able to plan their hoarding and dehoarding operations to attain these policy objectives. In effect, these authorities should be in total control of the markets for foodgrains. Unless such complete control of markets is attained, it would be extremly difficult to curb the speculative activities. However, attaining such exclusive control over the markets is no easy task. Not only, does it require enormous organisational structure but also regular and systematic efforts to closely monitor the markets spread over the length and breadth of the entire country. During the period when organisational structure of the foodgrains procurement and distrubution authorities is being widened and strengthened, special efforts may be required to control the speculative activites through legal action.

CHAPTER - VIII

AGRICULTURAL POLICY OF INDIA IN THE WAKE OF GATT

C H A P T E R - VIII

AGRICULTURAL POLICY OF INDIA IN THE WAKE OF GATT

AN OVERVIEW OF GATT : The General agreement on Tariffts and Trade (GATT), run by a small secretariat with a staff of about 400, has been the kingpin of tariff cutting and world trade expansion since 1948. It is a multilateral treaty that prescribes rules for international trade. The general agreement is a " contract" calling for non-discriminatory treatment of trading partners and setting rules intended to counter protections and the " law of the jungle" in international trade. The contract is what was left of the 1947 Havana charter drawn up as constitution of a planned International Trade Organisation (ITO). Since the end of the second world, eight rounds of multilateral trade negotiations have been successfully completed under the auspices of GATT. India is one of the twenty three original signatories of the GATT. Presently a total of 124 countires subscribe to GATT which has organised eight rounds of negotiations to free up international trade.

DUNKEL DRAFT AND AGRICULTURAL POLICY : Here we are concerned only with the emerging issues of Indian agriculture in the wake of Uruguay Round Negotiations. In December, 1992 Arthur Dunkel, the then director-General of GATT, proposed a draft (known as "Dunkel Draft" for agreement on all the topics covered in the negotiations on a 'take it or leave it ' basis. Dunkel Draft is a very legal and technical document. However, its contents have far reaching implications for the future of international trade and trading parties. As such it needs to be studied, analysed and discussed with all seriousness. The proposals have been commented upon and criticised by economists, politicians, government agencies and various professional exports. The Draft is divided into 28 sections and section 12 is concerned with Agriculture.

Indian agriculture is on the threshold of change in the wake of in external scenario, that is, India's efforts to open her econ ..y to global trade and the signing of GATT is the culmination of Uruguay round talks. The Dunkel Draft has very serious consequences for Indian agriculture. Agriculture has been placed on the agenda for negotiations for the first time in GATT in this Uruguay Round. Till now, GATT disciplines did not apply to agriculture. Historically, GATT has ignored trade distorting agricultural policies. At the Uruguay Round, it was agreed that GATT disciplines would extend to market access, internal support and export competition, being in mind the special dispensation to be granted to developing countries. In the light of new developments it became very important to assess the implications for agriculture.

India cannot achieve its objective of accelearting overall growth in the economy or improving the standard of living of its people, with a substaintial acceleration in agricultural growth since its one third of GDP and two-third of population still depend on agriculture. The present growth rate of about 2.2 percent per annum needs to be raised to around 3 percent if GDP growth rate is to be acceleraed significantly in future.

However, the Indian agricultural scenario has changed dramatically during the last two decades. The food problem has more or less been solved and the agriculture sector has established its resilience. Through farm produce surpluses are still erratic, the country is in a position to plan for exporting. The concept of exporting of high value farm goods and using the foreign exchange for importing relatively cheaper items, if need be, has been gaining legitimacy of late. Besides, acquiring hard currency to improve the country's balance of payment position, agricultural exports are demand necessary to sustain the tempo of farm sector as a whole.

The globalisation of Indian agriculture is viewed as a mean[illegible] ensuring better returns to farmers, besides facilitating the much-needed capital formation in the rural sector. It would also contribute towards employment generation apart from diversificaion of agriculture. Unfortunately, we wish to achieve all these agricultural develoments under the protection from the world community which seems to be unpracticable. If we want to make farming a business activity, our farmers have to face competition within and outside the country.

The Eighth Round of GATT agreement based on Dunkel Draft has concluded at very right moment since the proposal is in consonance with the Indian new economic policy which is lanuched with great enthusiasm. The Govt. of India has accepted the modified Dunkel Proposals and has finally signed the agreement in April, 1994 which will be effective from 1995. The document has been comoprehensive, most controversial and much discussed but least known in our country. Unfortunately, only few 'Lucky' academicians, politicians and administrators have accessibility to this document of more than 400 pages. The farming community could know about it through speeches of some politicians.

India had been the party to all the negotiations and managed to get differential treatment in all the earlier agreements on the ground of its poor economic condition. Member countries had, no doubt, sharp differences on some of the articles of Eighth Round negotiation but no country did afford to be left out of the negotiation since the GATT countries control nearly 90 percent of total trade in the world. The failure of the Eighth Round of this global negotiation would have weakened GATT, resulting in a disorder in world trading. The world Bank and the Organisation for Economic Co-operation and Development estimated an increase in global income of $ 217-230 billion as a result of the Eighth Round of GATT negotiation. India's share to the increased trade is expecgted to be about $ 4.6 billion.

In India, opposition to the current GATT negotiation has been less on economic considerations but more a "resistent to change". In earlier GATT negotiations, the developing countries enjoyed special and differential treatment. They were not expected to reciprocate the concessions which the developed countries were to give. The developing countries would not have had to open up their markets and would have been allowed to have quantitative restrictions. In the Eighth Round also, developing countries have been given differential restrictions, extent of tariffication, subsidy to agriculture, operation of PDS, etc. But were not satisfied with these rebates since India used to get a preferential treatment from the world community on the ground of developing country and had little experience of competitive markets operating in the world.

During the last 45 years, India grew as a protected child with liberal flow or grants and loans from international organisations and friend countries on favourable terms and failed to generate sufficient resources for development. As a result, per capita debt has accumulated to Rs. 3,000 and the country was in much trouble in even debt servicing and the credibility was saved after mortgaging gold. There is now psychological problem of getting out of the crutch of protection. It is a paradox that we want to emerge as one of the economic forces but wish to get special treatment also from the world community.

For accelerating agricultural growth in India,the main issues to be focussed are (a) raising the levels of investment, (b) resolving problem of land tennure, (c) increasing availability of credit, (d) ensuring apropriate price policies, (e) developing new technologies to increase productivity, (f) apropriate subsidy, & (g) tariff policies that would encourage agriculture. The price policies towards agriculture must ensure that the farmer gets a remunerative price. In recent years, substantial increase have been annonced to ensure that

price incentives are maintained. There is no doubt a limit to which a policy of subsidies is justifiable but in general it must be ensured that farmers are paid reasonable prices for their inputs and that these are appropriately reflected in the support prices announced by the government.

In this connection it is relevant to point out that agriculture will be a major beneficiary of the policy of the high level of protection earlier given to industry. There is a great need to redress the present imbalance by reducing industrial protection and simultaneously allowing and indeed encouraging export of agricultural products. The scope for agricultural production for exports including high-level products with some processing is very substantial. This should be fully exploited not only in the interest of the farmer but also in the interest of strengthening the balance of payments. Finally the logic of liberalisation implies that agricultural products must be allowed to move freely within the country in response to market demand.

It has been envisaged in the Dunkel Proposal that as a first step for reduction of domestic subsidy, calculations have to be made of the Aggregate Measure of Support (AMS) by each government. Subsidies are classifed into non-product specific (NPS) and product-specific (PS). NPS subsidies are those given for water (irrigation), electricity, fertiliser, seed, credit, pesticides, etc. and are available generally for all crops. The minimum support price and other crop specific subsidies are categorised as product specific subsidies. There are 22 agricultural products ranging from wheat, rice, sugar, pulses and oilseeds which are covered under product-specific subsidies as India provides minimum support price. The Government of India has provided Rs. 3,000 crores for food subsidy ard fertiliser subsidy in 1993-94 and proposed the higher amount for the current year. Agriculture production in 1990-91 was 176.40 million tonnes which has

increased to 181.30 million tonnes in 1992-93. Though the trend is upward but not satisfactory in the light of present economic development, world over.

The AMS is to be calculated separately for subsidies which are product specific and subsidies which are non-specific. In the case of developing countries, a limit of 10 percent has been stipulated separately for product specific and non-product specific AMS below which there is no obligation to make any reduction. Calculations made by the Ministry of Commerce, Government of India indicate that non-product specific AMS works out to be about 4 percent even if no allowance is made for a number of exemptions envisaged in the Dunkel Proposals including the exemption of input subsidies to low income and resource-poor farmers in developing countries. In the product-specific area AMS has been estimated to be negative in most products and positive but less that 10 percent on one or two products. On these products it is possible that changes in exemptions lead to the product specific AMS exceeding 10 percent. Additional flexibility is needed so that India's domestic support programmes remain totally unaffected.

The existing GATT rules on trade in agriculture lack rigorous discipline on the use of subsidies and quantitative restrictions. Taking advantage of this the industrialised countries have been heavily subsidising and protecting their agriculture. In this way, they tend to distort world production and trade of temperate zone agricultural food-stuffs. On account of competitive subsidization of cereals, daily products, meat, sugar, oilseeds, etc,. prices of these products in the world have been depressed for many years which have reduced market opportunities for those countries which are more effecient in the production of these articles.

The focus of attention in the Uruguay Round seems to be one the policies of the industrialised countries on agricultural trade and

production. As it is, the Third World countries stand disunited for want of an effective leadership. It is unfortunate that while U.S. and the EC withheld the negotiations for one full year, there was hardly any attempt by the developing countries to come together on issues of common concern. Of very late, the Indian Government is now fully busy in exercising measures to convince the nation that the Dunkel package is the best that contry could hope for.

The future prospects of Indian agriculture will have certain implications on account of four aspects, namely, (1) GATT & Agri-exports-stragetic issues (2) farm subsidies, (3) Market Access and (4) Intellectual Property Rights, We May discuss in brief each one of them in the following pages.

GATT & AGRI-EXPORTS : STRATEGIC ISSUES : While the GATT agreement is now several months old no concrete action has been initiated in India to captialise on the opportunities offered under it. While those opposed to GATT are taking over and over again (i.e., we have sold ourselves to the developed countries) the supporters are blindly projecting India as a major partner in global trade in agriculture. In the process we are losing sight of the fact that the "proof of the pudding" is in the follow up.

Export prospects for agricultural commodities from India to the developed world are projected to brighten because of the following features in the GATT accord (a) reduction in aggregate measure of domestic support and (b) tarrification of import barriers and their reduction. Other things remaining equal, the first set of measures is likely to make Indian products more competitive and the second set of measure is expected to open up more markets for Indian products.

Other things may not remain equal, however. Consider the first feature of the GATT accord. Among crops, wheat, rice, coarse grains, sugar and

oil are being supported in varying degrees in the OECD countries. True, the support is reduced and, in course of time, eliminated, supply from OECD countries in the short run will fall and world prices may be predicted to rise. Studies show that wheat prices may rise substantially; rice the least (reflecting the relatively minor importance of the OECD countries as a group in the world rice market); and other grains moderately. And the price of heavily subsidised dairy and meat commodities are expected to rise more than others.

But whether India will gain from such a trade accord or not will depend on two factors : (a) whether it is a net exporter or importer of the commodities whose prices in the world market are expsected to go up; and (b) whether over a period of time , it can generate adequate exportable surplus in some of these commodities at "competitive rates".

As far as foodgrains are concerned, India, clearly, is a net importer. Average net imports per annum stood at 2.14 million tonnes in the seventies, 1.34 million tonnes in the eighties and 1.18 million tonnes in the first four years of the nineties (despite several good monsoon in row). Taking the entire period, domestic foodgrains production clearly fell short of domestic requirements in as many as 15 years, barely kept pace in four years and convincingly excceded domestic requirements only in five years.*

True, India has built up a massive reserve of foodgrains, variously estimated at between 35 and 40 million tonnes. But this is not reflective of any change in the food balance sheet. Per capita availablity of foodgrains in 1994-95 was less than in 1991-92. It is just that the government's price and distribution policies priced the products out of PDS, and PDS offtake shrank. The government had no alternative but to stock up the supplies.

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* The Economic Times, May 16, 1995.

Trends in real factors in Indian agriculture are really disturbing. Investment in agriculture, after adjusting for inflation, has been declining for more than a decade now. As a result, research and development in agriculture has suffered, development of irrigation has lagged behind plan targets, and there has been a perceptible slowdown in the rate of growth of HYV area and fertiliser consumption. All these factors have had their effect on foodgrain productivity. The weather-adjusted yields of wheat and rice have been going down; even if we consider the actuals (i.e. the weather unadjusted yields) they have levelled off in the more recent years. What is true of foodgrains, is more or less, true of sugarcane and oilseeds also. But for several good monsoon years in a row, agriultural production would have suffered a major set back in India. It may still do.

In my opinion, our strategy in respect of foodgrains, sugarcane and oilseeds in the context of GATT accord should be loss minimisation. We should step up investment, both public and private with the objective of minimising the need for massive imports which will now become more costly. Plan expenditures should be directed more towards programmes which aim at strengthening the line agencies-research, extension, input supply and credit, and less on programmes which attempt to deliver services and subsidies to target beneficiaries. In the field of irrigation, emphasis should be on improvements in water management, better training, and provision of adequate funds for operation and maintenance.

It is unlikely that the crop sector, as defined above, will be a major player in the world market as a result of the GATT accord.It should be remembered that a manifold rise in investment in the seventies, with the advent of green revolition technology, made only a minor ripple in the long term trend in producion. Also, most of the crops, either because of variety or cost are not very competitive in the world market. And the world market for rice is very thin. Perhaps India can

still gain from a liberalised trade policy whereby it can time its exports and imports in a manner that it can export expensive varieties for cheaper varieties, it can export when prices are high and import when they are low. However, the possibility of India becoming a major net exporter in these crops does not look very promising.

However it is the second feature of the GATT accord which holds a grate deal of promise for India. India enjoys comparative advantage per se in a number of commodities e.g., coffee, tobacco, tea, horticultural products, processed foods, etc. and, with proper investment and policy thrusts, India can tap a much wider market than hitherto possible. Under this India can also explore the export market for dairy and animal products.

The major constraints on increased exports include (a)treatment of export as a residual activity (b) control on exports (c) under production of high value live stock (d) infrastructure; (e) inadequate marketing and (f) technology upgradation. Clearly some of the these require policy support. Others,massive investments. The government should play a supportive role. The experience of other developing countries suggest that those who have succeeded have done so because of foreign technological collaborations, scale economies, and organisational superiority. And, the government has supported these activities.

India will have to further ease the inflow of foreign investment and technology. It may also need to amend the land ceiling laws and help set up institutions. On export controls, treatment of exports, etc., the government must come out with a medium-term policy. Similarly, on infrastructure support, the government should announce a medium term fiscal policy (the five year tax break announced in the present budget may not be enough).

Investible funds will flow under the right type of environment. Private sector will play a crucial role in this regard. In case of lumpy investments involving long gestation periods, the government can provide "seed money" or "endowmennt fund" against which industry can borrow from the market. In short , the investment and policy focus of the government must shift on these groups of industries if we are to benefit from the recently concluded GATT accord on agriculture.

INDIAN AGRICULTURE AND THE COMPETITION IN THE WORLD MARKET : The Uruguay round of multilateral trade negotiations was concluded in December 1993 after seven years of protracted negotiations. As regards the pros and cons for Indian agriculture, the official line is that "In agriculture we are not required to reduce any of the subsidies given to our farmers as the aggregate value of our subsidies is negative because our minimum support prices are far below the relevant international prices. " Hence the government is of the opinion that Indian cereals'production is in a position of comparative advantage in the international market, despite fragmentation of land holding, low capital formation and sustained state repression. What needs to be done is to bring about a parity between domestic and international prices of foodgrains. But not many economists subscribe to the official view, as the removal of subsidies under the Dunkel proposals have come under severe criticism. Here an attempt is being made to examine the methodology used for calculating or estimating the extent of agricultural subsidy and further examine whether Indian agriculture can be truly regarded as competitive in the world foodgrains market or not. The aggregate measure of support has been considered as an index of subsidy in the Dunkel draft. It has been estimated by the Ministry of Commerce that the aggregate measure of support (AMS) to agriculture in India is 5.2% and it will be lower if the exemption allowed for low income resource poor farmers were taken into consideration. According to another study by Ashok Gulati and Pradeep Sharma, " though the

product specific AMS for 17 commodities was found to be Rs.(-) 151.03 million, the extent of taxation (both product and non-product specific AMS) was still quite high i.e. (-) 12.5% of the total value agricultural output during the 1986-87 to 1988-89 base period. There were only two commodities - sugarcane and oilseeds - which showed positive product specific AMS. Similar results were obtained for the trienieum ending 1992-93.* Thus, they are of the opinion that Indian produce is in a position of camparative advantage in the international market. A similar study by NCAER also confirms this view, as it finds India enjoying competitive advantage in a number of cereals, fruits, cotton, some foodgrains and health goods.

In the background of the above two estimates of AMS, one needs to comment on their methodology and the conclusion drawn. Firstly the basis of computation by the Commerce Ministry has not been made public. Secondly, as cross- subsidisation of ariculture is common in India i.e., by public utility outside the budget, the AMS may underestimate to the extent of both product and non-product specific subsidy. Thirdly, the regime of subsidies which do not separate farmers on the basis of land-holding, may underestimate the level of subsidies provided to the agricultural sector.

According to an estimate done by Y. K. Alagh and others, the subsidy given to the Indian farmer is higher than 40% and as Indian agriculture diversifies to meet the challenges of global trade, particularly in dry and semi-arid tropics and as farmers switch from low-yielding monocrop system to high -yielding and multiple-cropping system and if diversification of Indian agriculture on a more sustainable pattern is to be maintained, India will have to continue with these subsidies.

The use of AMS as an index of subsidy in India is also questionable on various other counts and hence it cannot serve as a guideline for

* Myth and Reality, Rakesh Singh, The Economic Times, Nov. 26 1994.

bringing about parity between domestic and international prices of foodgrains. It ignores the differences in the relative price structure, purchasing power disparity and the exchange rate systems. Besides, it assumes complete market parity in agricultural system across the world. It ignores the domestic support provided to other countries which ranges as high as 72% in the case of Japan and 37% in the case of USA and the European Community, and hence uses highly distorted border prices for calculating AMS. Now let us examine the issue of competitive advangtage in agricultural trade. According to the Commerce Ministry and other estimates, the Indian farmer is negatively subsidised i.e., net taxed. Hence, one can say that Indian major cereals are competitive in the world market and if the GATT accord is implemented, our foodgrains exports will increase many times. In order to realise export advantages, we will have to sell our cereals in the international market. But before we start selling our cereal products in the international market, the following points will have to be taken into consideration.

There are number of studies which have attempted to estimate India's foodgrains demand and these show a fairly surprising degree of consensus in placing elasticity of demand for foodgrains at 0.4%. Given the falling public and private investment, high degree of fragmentation of land holding, proper marketing, underdeveloped storage and transportation infrastructure facility, will we be able to compete in the international foodgrains market? The answer to this requires a cross-country comparison of fertiliser consumption per hectare vis-a-vis agricultural productivity. "The US yield rates of cereals, pulses, sugarcane and potato are 2,5,3,1,2 and 2 times more than India's , whereas US consumes only 43.4 kg of NPM per hectare compared to India's comparison of 64.1 kg. Similarly, Canada, Argentina, Mexico and Thailand, despite having a higher yield rate, consumes less amount of nutrient as compared to India.

Yield rates of cereals, pulses and potato are 3, 3, 9 and 2 times more than those in India, whereas France consumes 3.1 times more fertiliser than India. Although Australia's cereal yield rate is lower than that in India, but Australia's fertiliser consumption is only 2.4 kg hectare compared to 64.1 kg in India (Source: EPW).Thus, India does not enjoy competitive advantage as studies on subsidies would have us believe. It is also important to recognise that cuts in the agricultural subsidies as mandated by the Uruguyr round would by and large raise the price of the temperate crops such as wheat, oilseeds, sugar beet and hence sugar. The prices of the most tropical crops which constitute India's tadition1 agricultural export and where India has revealed comparative advantage, would not be influenced be the outcome of the Uruguay round. India is currently the net importer of oilseeds and edible oils. Hence in regard to trade in these commodities, India will be worse off.

India, however can still export high value cereals and have tremendous competitive advantage in the area of horticulture, floriculture, vegetables, sericulture and acquaculture. To make the most of this, the Indian government will have to work out a strategy. Swaminathan's suggestion to set up a 'Small Farmers agribusiness consortium,' with marketing and other infrastructural facilities, could well form a basis for agribusiness in India. This may help vertical integration between the Government,Corporate Sector and the farmer groups while recognising India's domestic needs and the urgency to step up agricultural exports.

FARM SUBSIDIES : Farm subsidies in different forms are provided to their farmers by almost all the countries in the world. The sum total of agricultural supports in OECD economics leaped by 12 % to a record of 300 billion dollars by the end of 1990. The producer subsidy Equivalent (PSE), a measure of total subsidy paid to farmers, rose by 16% to 176 billion dollars, 44% of the value of the crops and livestock produced. In the per capita allocations, the US spends $ 22,000 per

full time farmers in yearly production subsidies outsripping Japan ($ 15,000) and the EC($ 12000). The subsidy extended by the US to some of products as a percentage of production was 51.52% in case of corn, 49.51% in case of sorghim, and 58.79% of soyabean. These subsidies are the highest in the world. The European Economic community subsidises their farmers to the extent of 135 billion dollers per annum, which accounts for nearly 0.75% of their GDP.

The EEC by heavily subsidising its farmers had emerged as a potential threat to the US export market in agricultural produce. Further, the EEC is in the advantageous position to export meat and meat food products to the US at a comparatively lower prices. There are also legislations to restrict the US imports into the EEC. Hence, the US vigorously fought to push the agriculture into the Uruguay Round in order to force open the EEC market to the agricultural products of the US.

Initially the USA pushed for complete withdrawal of all subsidies to agriculture. But it was strongly resisted by the France. A meeting in 1990, that was to bring the Round to the conclusion collapsed over agriculture. Then came the Draft Document from the then Director General of GATT, Mr Arthur Dunkel, to provide the basis for future negotiations. Though France immediately rejected the Draft provision relating to agriculture, but agreed on a comprehensive reform of its agricultural policy. The agreement was reached to reduce certain types of farm subsidies by 20% and export subsidies by 36% over a period of six years.

So far developing countries are concerned, they are required to reduce subsidies if they exceed 10 % of the value of agricultural production. The Govt. of India has stated that the subsidies at present do not cross the limit prescribed by the GATT, and there is no GATT induced pressure to cut subsidies. The product subsidies, it provides for 12

major crops, is negative and for 3 crops - Ground nut, sugarcane and tobacco - is positive but less than 10%. Non-product subsidies are less than 6% of the value of production. But still there is confusion about the methodology for estimation of farm subsidies. It is feared that the slight variation in the method of computation would push the Indian farm subsidies above 10 %.

MARKET ACCESS : The Dunkel Draft proposed that the member countries should minimise the quantitative restrictions on export and import of agricultural commodities. In our country, quantitative restrictions are practised for controlling the amount of imports and exports which are to be replaced by imposing duties or tariffs under changed situation. Under the proposal, all tariffs are to be reduced by 24 per cent in developing countries by the year 2005 whereas developed countries will have to reduce such tariffs by 36 per cent.The reduction in tariffs will be applicable to all the member countries. Hence, developing countries, including India, will have opportunities to increase their exports because the reduction in import duties will be comparatively higher in developed countries, making their product cheaper in developed countries. Under the international trade environment, India would be able to sell larger quantity of agricultural products.

Apart from the reduction of tariffs there is a provision of market accessibility in the proposal. It connotes that member countries have to allow imports at the level of import during 1986-88. India is not going to suffer due to this clause since our imports showed increasing trend and the value of our import increased from Rs. 222.44 billion in 1987-88 to Rs. 431.93 billion in 1990-91. We will have opportunity to reduce our import by more than 50 per cent. Moreover, there will be no chance of any forced import for India due to the GATT negotiation since our present import is nearly double of the import at 1986-88 level.

If there is insignificant imports taking place after imposing these provisions, member countries will have to reduce tariffs so that imports are reached upto the level of 2 per cent GDP in developing countries and 3 per cent in developed countries. India is not going to be influenced from this provision also since our import is estimated to nearly 10 per cent of our GDP. Our country would not be required to increase imports to meet the requirement under GATT agreement. Moreover, we would have leverage to reduce our imports by more than 75 per cent for meeting required level of imports of 2 per cent of GDP. In spite of all these facts, we can escape from these forced imports by invoking the exemptions given to these countries having balance of payment problems. Since India is having unfavourable balance of payment it is hoped that we would not have to tariffy for increasing imports, if even needed.

TRIPS (TRADE RELATED INTELLECTUAL PROPERTY RIGHTS): There are seven types of TRIPs. They are copyrights, trade marks, trade secrets, industrial designs, integrated circuits, geographical indications and patents. Except patents, in all the other areas, our policies, laws and regulation are almost similar with those operating in the world. It is only in patents that there is sharp divergence between the norms and standards advocated in the Dunkel Draft and the Indian Patents Act, 1970.

Intellectual property Right is really an incentive for the scientists or plant breeders who are devoted to the field of science and engaged in developing new crop varieties. This system will be, no doubt, a new concept in our country but Europe did have existing system of protecting plant varieties. This system has been operative in Europe since 1961. They have an organisation, namely UPOV (Union pour le Protection des obtentions vegetals) for monitoring the plant breeders rights. After the introduction of plant breeders right, most of net importing European countries now became net exporter in agricultural

produce. Hence, it may be said that the introduction of IPR had not any adverse effect on agricultural development in India also.

The provision of patenting of seeds and plants under the Eighth Round of GATT negotiation would restrict the Indian breeders with regard to copying those seeds and multiplying them on their own farms with a view of selling them within the country. It would adversely affect the interest of plant breeders who believe largely on copying the research work done in developed countries, but they form a microscopically small segment of the Indian breeders community. There are large number of plant breeders who are working on indigenous materials to generate appropriate technologies for different locations. It is also worth mentioning that the research efforts of developed countries are now focussed on high value crops. There is little research being done by these countries on pulses, cotton, oilseeds and cereals which are the major crops grown in India. Hence, Indian scientists should engage themselves to evolve improved varieties of these crops, particularly suitable for rainfed and moisture stress situations. There is no bar to evolve varieties to export oriented crops like spices, fruits, vegetables, etc., since we have huge germ plan and variability in these crops in our country. When new varieties are evolved and patented, our country too can earn profit by exporting them to Third world countries.

The introduction of IPR may lead to an increse in the price of seeds of high quality. But the incremental increase in the cost of seeds would be much lower than the value of increased production due to new varieties. The proportion of seed cost varies from 2 to 10 per cent of total cost of cultivation, hence, an increase in price of seeds may not affect much on cost structure of crop production. The Indian farmers are wise and they cannot be attracted to any new technology, including seeds if margin over the old one is not more than 30 per cent. Hence the profit to farmers would outweight the seed cost due to the higher

productivity of new varieties. Majority of our farmers are, no doubt, poor but they do not hesitate in making investment on economically beneficial technology.

As per article 27 of TRIPS in the Eighth Round of GATT negotiation, there is no provision for the patenting of plants and animals.Farmers are also allowed to save seeds for next year crop. The right of farmers and breeders to use and reuse patented seed materials is not threatened since the Government too has the authority to build in adequate safeguards.

There is a general feeling that the multi-national corporate sector will capture the Indian seed market but this fear is not based on any fact. In this context, the case of Pioneer seeds, Cargil seeds and sandoz seeds are worth mentioning. These companies have been operating in our country since long but these companies are yet to make any significant dent in Indian Seed market.

In addition to gain in agriculture sector, India will be benefited through agreement on the movement of scientific personnel, including agricultural scientists which will allow our professional to travel freely to the developed world to provide services on short term basis. The unilateral trade action of the U.S.A. and other giants of world trade will also be curbed. The section 301 will remain in the U.S.A. statute book but it cannot be used in areas which come under the Eighth Round of GATT agreement.

Any dispute relating to clauses of this agreement will have to go through the multilateral dispute settlement procedure. All the member countries are expected to follow the theory of comparative advantage to increase the benefits under changed situation. It may be said that the current GATT negotiation will facilitate our mission of globalisation of Indian agriculture. It would lead to dismantling of the control

regime in the form of subsidies, procurement prices and control over movement of agricultural produce in the country. Thus, the freeing of agriculture from all artificial restrictions will not only raise agricultural income but also provide incentive for more investment in the farm sector. Now there is an urgent need to implement the Eighth Round negotiation of GATT right perspective without giving any political tinge and work hard unitedly to reap the maximum possible benefits through international trade.

From the Indian perspective, the Dunkel Draft is a mixed bag with positive as well as negative points --- on balance the positive points outweigh the negative points. The different aspects of Dunkel Draft on agriculture can be better analysed after taking into consideration of its plus and minus points.

PLUS POINTS : 1. It seeks to integrate agriculture in GATT through specific binding commitments on market access, domestic support and export competition. 2. Investment subsidies to agriculture in developing countries and agricultural input subsidies to low income or resource-poor farmers in developing countries are exempted from domestic support reduction, (3) Developing countries with aggregate support levels of upto 10 per cent individual products have no reduction commitments for product-specific support, (4) There will be tarriffication of border measures, Custom duties will be reduced on a simple average basis by 36 per cent with a minimum rate of reduction of 15 per cent for each tariff line. (5) Export subsidies will have reduction commitments of 36 per cent on budgetory outlays and 24 per cent on quantities. For developing countries the commitments will be 24 per cent and 16 per cent respectively, to be implemented by the year 2005, (6) Domestic support will be reduced by 20 per cent. Developing countries with balance of payments problems do not have tarriffication commitments, ceiling binding on tariffs and (7) Preferential treatment

on the application of sanitary and phyto sanitary measures against imports, as a developing country.

MINUS POINTS : 1. Agricultural input subsidies will be permitted only for low income or resource-poor farmers, not across the board, (2) Domestic food aid such as through the Public Distribution System (PDS) will be on the basis of clearly defined criteria related to nutritional objectives. (3) Exemptions from reduction commitments are granted for decoupled income support and payments under regional assistance programmes. The European community can take advantage of this, (4) If product-specific is more than 10 per cent, developing countries have a commitment to reduce domestic support by 13 per cent by 2005, (5) Food purchases by government will have to be made at current market prices, sales from food security stocks will be made at not less than current domestic market prices and (6) Requirements concerning current access and minimum access are not clear.

SUMMING UP : It is difficult, well-high impossible to conjure up the exact picture regarding the impact of Uruguay Round on Indian agriculture. Nevertheless, it cannot be gainsaid that the negotiations will set new challenges before Indian agriculture. The 'Sheltered' nature of Indian agriculture will have to undergo a radical transformation if the wide ranging benefits accruing out of Uruguay Round are to be reaped. Let us wait and watch how does Indian agriculture adjust to the new situation. The tone and temper of this adjustment will largely hold the clue not only to the prosperity of agriculture, but to the whole India. Now, India has accepted and signed GATT agreement, therefore, the Government of India should pay due attention on the following aspects. (1) A well defined national agricultural policy which is growth oriented, farmer-friendly and export-oriented is needed to be framed. (2) State Government should amend the Agricultural Land Ceiling Acts. (3) Consolidation of land

holding needs to be implemented with vigour in the country. (4) Agricultural sector should be given the status of an industry in terms of price fixation of the produce, provision of budgetory support, credit, power, transport and export facilities, (5) Procurement of farm produce for public distribution should be the exclusive concern of Government and the farmer should not be made, by regulation to sell his produce at a price fixed by the Government, (6) Creation of infrastructural facilities to augment production, processing, storage, marketing, and transportation should be made available (7) Bank credit for the agricultural sector should be stepped up considerably (8) Irrigation policy should be amended in the light of latest technology, (9) Fertilizer consumption should be promoted to increase production to meet the increasing domestic requirements and for promotion of exports, (10) Unnecessary conditions on imports of farm machineries, seeds, plants and other inputs should be removed without any delay,(11) Export procedure should be rationalised and simplified in the light of GATT agreement and (12) Biotechnology should be promoted in the country on a massive scale to tackle various problems afflicting Indian agriculture.

It is beyond doubts that if India implements the provisions of GATT agreement with absolute care caution, it will gain significantly through increased exports. The time has really come to join hands with World Trade Organisation and make India, as one of the most economically sound countries. We hope that India will not loose the race of economic development in which more than hundred countries have participated by signing the draft projected by Mr. Arthur Dunkel.

THE URUGUAY ROUND & AFTER : In fine it may be said that structural adjustment and trade liberalisation are matters of immediate and deep concern for all those interested in economic development. And the sheer size of India's agricultural sector and the importance of agricultural

products in its consumer budget enhance the impact on the economy of both agricultural performance and agricultural policy. In addition, the bulk of the poor are in rural areas and are dependent on agriculture. Consequently, agricultural policy and performance have been major concerns for Indian policy makers. The agriculture sector has long been under the government's protective cover in developing countries - this is true of India as well - but now, the Uruguay Round has tried to open a new area of agro-exports, which has important implications for India in view of its comparative advantage in several agro-products.

The question that emerges is : Will India's natural competitive advantages be enough to battle the acquired, and often induced, competitive advantages of the developed countries these acquired and induced advantages are related to the developed countries immense technological and infrastructural advancements. The concept of comparative advantage has definitely undergone a change from the days of David Ricardo and Heckcher and Ohlin, when comparative advantage was more due to factors of land, labour, natural resources and capital. The basic postulates behind the optimism emanating from the GATT provisions of Market Access for the export of farm products has also been examined. It is generally perceived that the increased market access will automatically expand the export market for Indian farm products, and that India, which is one of the large producers of certain farm products, will automatically get the lion's share of global exports in those commodities. But this perception is misplaced. "The so-called 'surplus,' "it is argued is one of the articles, "is due to lack of purchasing power of the domestic consumers. Export promotion activities in respect of these commodities, without a quantum jump in production may lead to increased export at the cost of deprivation and malnutrition of the domestic consumers." It has also been brought out in that acute shortage of cold storage, transportation (all-weather roads), electricity, credit and other facilities, not only at the level

of processing and packaging, but also at the place of production, would be a big handicap for Indian farmers. Therefore, Indian's present strength and future capability in relation to its competitors, rather than mere access would determine its actual share in the export market.

Another factor is the quality of farm products. Recently, Indian mangoes were rejected by Japanese importers due to the organic/inorganic residues on the mango skin. So the big hype for increased market access for Indian agroproducts would be meaningless unless Indian producers confirm to international ssanitary and phyto-sanitary standards, processing and packaging specifications etc. This exercise would entail greatly increased investment in sophisticated, modern technologies, which will whittle down the cost advantage enjoyed currently by Indian farm products.The Indian government, too, might have to pitch in with resources, given the negative aggregate measure of support (AMS) enjoyed byIndian farmers. So where are we? In a zero-sum game?

Subsidies have long played an important role in governing international trade in agriculture Developing countries have generally subsidised their industries on grounds of infant industry protection, while developed countries have done so to protect the foreign market shares of their traditional export-oriented industries.

The GATT provisions, which oblige contracting nations to bring subsidies to a level, and which are intended to give equal opportunity to all nations, have already been discussed earlier.

Trade in Agriculture thus explains the concepts of agricultural competitiveness in simple language, which should enhance its value for lay readers as well. However -may be, because it is a record of symposium - it fails to address some of the key issues pertaining to agricultural policy reform.

First, while trade liberalisation is expected to lead to improved resource allocations and higher output, aggregate welfare is likely to decrease in the short or the medium run because of the slow reallocation of resources, which will definitely have political implications, especially in a democracy like India. Second, liberalisation of world agricultural trade will lead to higher agricultural prices. In the absence of any liberalisation in agricultural trade, India was not likely to be affected by spiralling prices of foodgrains, given its relative insularity.

But the new regime will lead to increase in price transmission elasticity, which, given India's large below-the-poverty-line population, will pose a problem policy-makers will find difficult to redress. However, these are questions that relate more to political economics rather than to trade economics, and who knows, the IIFT may yet address them in its next symposium on trade in agriculture.

CHAPTER - IX

SUMMARY OF FINDINGS, CONCLUSIONS AND SUGGESTIONS

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EVALUATION OF GOVERNMENT AGRICULTURAL PRICE POLICY : Price policy, whether of agricultural products or of manufactures, is formulated keeping in view some objectives. The objective of stability is, perhaps, the most important one, more so, in agriculture, where due to strong natural factor, serious fluctuations can occur. Drastic and frequent fluctuations are deterrent to the production incentive and result into considerable uncertainity. Government's agricultural price policy in India is designed by the Agricultural Price Commission (APC) which after taking note of the cost of production fixes procurement prices and minimum support prices of different agricultural commodities. Procurement prices are those at which the Government procures surplus grain from the farmers and support prices are those at which the Government is bound to purchase the surplus grain if prices fall below the minimum level. However, the effectiveness of these prices is determined by the level of implementation. Many a time what has been happening is that the level of implementation would remain below expectation and there would arise differences between the actual procurement prices and the effective market prices. These differences, sometimes, have been found to be so substantial that it has affected adversely the market arrivals. Such ineffective implementation and regulation of prices, even now, leads to fluctuations in agricultural prices which are not desirable.

The principal objectives of the agricultural price policy are to step up agricultural production, prevent excessive rise in prices and stabilise both seasonal and annual price fluctuations. The main objective of the thesis is to study the trends in prices of foodgrains during the Planning period the impact of efforts to stabilise prices on the stability of prices and on the incomes of farmers producing foodgrains and to draw inferences for policy formulation. In addition

to analysing and examining the price trends and policies of foodgrains in India, an attempt is also made to critically review the policies and to offer some guidelines for future policy on the basis of the observations and suggest policy reformulations and alternative strategies. The study has been conducted in a systematic manner by setting up appropriate hypotheses adopting suitable theoretical framework and employing statistical tools of analysis and logical methods to analyse the issue in the thesis.

The prices of foodgrains play an important role not only in influencing the production decisions of the farmers but also in determining the demand conditions for foodgrains. As discussed earlier, rapid increase in population is the primary factor which determines the demand for food. Moreover, a rise in per capita income is also associated with a substantial rise in the demand for food. Hence, income elasticity of demand for food is comparatively high in India. Moreover, high prices result in consumption of food below nutritional requirement, thereby leading to ill-health and low productivity.

The relative levels of foodgrains prices influence the allocation of prodcution resources and the level and pattern of food production. Price relationships effect relative profitability and economic incentives. A dynamic price policy plays an important role in modernisation and in augmentation of food production. It is also found that an element of uncertainity in prices, affects the foodgrains productin. An effective price stabilisation programme is called for, for dealing with such an unpredictable situation.

The scope of the study is confined only to the planning era. The study has been organised into nine chapters. First chapter is introductory. Second chapter has reviewed the existing literature on the subject. The third chapter deals with the historic perspective of the availability of foodgrains, level of production, variations in prices and prevalent

policies since 1951 to Eighth Planned period. The fourth chapter is devoted to the discussions of views and reviews of agricultural Price Policies. Performance appraisal of various instruments of Agricultural price policies have been given in chapter fifth.

As a theoretical backdrop, an analysis of the agricultural market within the over theoretical framework of the theory of prices is attempted in sixth chapter.

In chapter seventh a theoretical framework of the operations of the stabilisation programmes is discussed with a view to analyse the implications of various types of policies and programmes for the overall objectives of price and income stabilisation. The experience of the US implementing the similar programmes has also been discussed. Agricultural policy of India in the wake of GATT (URUGUAY ROUND and After) has been thorougly examined in chapter eighth and finally in chapter ninth summary of findings, conclusions and suggestions have been given.

Before empirically analysing the factors determing production of and demand for foodgrains in India, an attempt has been made to study the trends and extent of stability in foodgrain prices. The analysis are carried out for various plans and periods and for major categories of commodity baskets.

The declining trends in the prices proved to be only a phenomenon of the first plan period. Even this declining trend was not found to be statistically significant. The continuous increase in prices is noticed since then except during the year 1975-76 when there was a marginal decline in the general price level. There was stability of prices during the second plan with the exception of pulses. Price levels were very unstable during the third and fourth plan peiods. Stability in price level was seen only during the fifth plan period and to some

extent during the annual plans of 1966-67 to 1968-69. The continuous increase in prices is noticed during the seventh five Year Plan, two annual plans and also during the period of eighth plan period upto 1994-95. For the first two decades of 40 years - period of study, statistically the rate of increase in the price levels is found to be more or less same. However, the rate of increase in the levels of prices during the decade of eighties found to be statistically higher than during the previous twenty years.

It is found that prices of pulses were highly unstable compared to those of cereals and all other categories of commodities. However, wide fluctuations in the price indices of pulses do not have much impact on the general level of prices, for the weightage assigned to the pulses in the construction of wholesale price index of all commodities happens to be very low. The annual rate of increase in the wholesale price index of all commodities is about 6 per cent. But, the annual rate of increase in the prices of pulses is about 7.6 per cent.

The result have shown that the rate of general price level was stable until 1970 (4.35 per cent until 1969-70 and there after 5.78) and the rate was higher during the seventies. Thus the so-called initial declining trends in the price levels during the first plan period are not significant taking the overall trends in the price level into consideration. Our study has disclosed that the wholesale price index of primary articles had also increased at an accelerated rate during the seventies-eighties.

The rate of increase was more or less same in the case of wholesale price index of foodgrains during the period under review, but the declining trend during the initial period has not been found to be significant. However, it is interesting to note that during seventies-eighties, the level of foodgrains increased at the same rate at which it increased during the period 1950-51 to 1969-70.

The increase in wholesale price index of cereals was significant only marginally (0.05) during the period under review, but the rate of increase in the prices (7.6 per cent) of pulses was much more than that of the cereals, food articles and entire commodity basket. It is also found that in contrast to a 1.43 per cent increase in the average annual rate of inflation during the period 1970-71 to 79-80, the increase in the rate average annual increase in the wholesale price index of foodgrains, food articles and primary articles are above the rate of increase in the general price level, during both the periods.

During the decade of fifties, the average level of wholesale price index of pulses was lower than that of all commodities by 7.5 percentage points. The wholesale price index of pulses exhibited a greater degree of instability during the period compared to cereals.

During the sixties, the price indices of foodgrains and cereals were marginally greater than that of wholesale price index of all commodities. But, the price index of pulses was more than of all commodities even though they were less during the fifties. During seventies, the price index of pulses increased more rapidly than the general price index even though the increase in cereal prices was more or less in conformity with the increase in the general price level.

An attempt is also made in the study to identify some of the cruciable variables that influence the production of foodgrains. Our analysis has shown that price of foodgrains has a significant role in the determination of foodgrains production. An expectation of increase iln foodgrains prices is likely to lead to an enlargement of production of foodgrains. It can also be inferred that foodgrains production in India is becoming market oriented despite low price elasticity of foodgrains production.

Contrary to popular belief, our analysis has not shown significant changes with regard to the impact of monsoon on agricultural production. However, this result may be due to certain deficiencies involved in the construction of the index numbers of rainfall as done in this study.

Our analysis on production of cereals disclosed that the production of cereals is guided not by the cropping intensity which is related to irrigation availability, adequacy of rainfall, but also by the price expectations. It follows that the prices of cereals have an important effect on the production of cereals.

With regard to pulses, the variables-index numbers of net sown area, index numbers of cropping intensity and index numbers of cropping pattrern possesses statistically significant parameters. Moreover, index numbers of net sown area and index numbers of cropping pattern possess negative signs contrary to"a priori" expectations.

The demand for foodgrains depends upon the level of income, the prices of substitutes, tastes and preference. People who can afford to buy a commodity at a higher price consume the commodity and other go without it. Demand for foodgrains moves in the same direction in which the income moves and the opposite direction of the movement price.

As regards the impact of variations in the general price level on the demand for foodgrains the estimated parameters of the variable is not statistically significant.

The inelasticity of demand for foodgrains with reference to foodgrain prices indicates the importance of foodgrains as a basic necessity. One per cent increase or decrease in the wholesale price index of foodgrains brings about less than one per cent (0.2433 per cent) decrease or increase in the demand for foodgrains. Moreover, one per cent increase in the index numbers of real national income leads to as

much as 0.4145 per cent increase in demand for foodgrains. A large segment of Indian population manages to survive on a meagre quantum of foodgrains consumption leading to malnutrition.

With regard to cereals, the income elasticity of demand for cereals is 0.4288 and price elasticity is - 01549. The price elasticity of demand for cereals indicates that one percent variation in the price if cereals brings about only 0.1549% variation in the demand for cereals, in the opposite direction. The empirical result that the estimated parameter of the variable - wholesale price index number of pulses - in the demand equation for cereals is statistically not significant goes to show that there is no substitution between the consumption of cereals and pulses on account of variation in their prices. This is only an indirect and tentative conclusion.

The explanatory power of the estimated functions of pulses is high compared to those of the estimated demand functions for foodgrains and cereals. One percent increase or decrease in the index numbers of real national income brings about an increase or decrease of 0.2996% in the demand for pulses. In response to one percent variation in the wholesale prices index number of pulses, the demand for pulses varies by 0.3831% in the opposite direction.

Our analysis has shown that the income elasticity of demand for cereals is more than that of the demand for pulses, thereby indicating that a given consumption of cereals than in the income level lead to much larger increase in the consumption of cereals than in that of pulses. On the contrary, the price elasticity of demand for pulses is more than that of the demand for cereals. It follows that the impact of price variations of pulses in the consumption of pulses is more than that of equivalent price variation of ereals on cereals consumption. High prices of pulses make their consuumption prohibitive and thereby lead to deficiencies in meeting protein requirement of the population.

While preparing a document like price policy it has to be kept in view that the benfits percolate to all sections of farm population. Usually it has come to notice that the benifits accrue more to large farmers than to small frmers. Large farmers have better access to inputs and they generate more marketable surplus compared to small farmers who do not enjoy that access to inputs even the system of procurement is such that the small farmer is not reached in his own village. The Government operates through private commission agents and does not enter the open market. In some cases, it has also been noted that large farmers hold back their surplus and sell it at a higher price sometimes later in the open market. This benefit does not accrue to small farmers who are in greater need of cash and sell their surplus through procurement channel only. Strong regulatory measures are, therefore, required in this regard so that incentives are provided to both large and small farmers in adequate measures.

An agricultural price policy should also provide safeguards to the consumers and one of the ways to do so is through proper public distribution system. As such a public distribution system should provide for adequate food through fair price shops to meet the requirements of the vulnerable sections of the society, should include all the major crops and should reach the rural depressed section. It may be noted that our public distribution system flops on all these counts. Sales are often inadequate; mainly rice and wheat are covered ignoring other inferior grains which form the food for the poor and also does not cover all the rural poor population.

Procurement prices have been raised year after year and agriculture forming the dominate sector in the economy, the general price level has been moving up in full sympathy with the trend in procurement price. As such, these prices tend to be inflationary. It has been observed that higher procurement prices in the previous years have enhanced the

holding power of large farmers which in turn becomes a contributing factor to further rise in procurement prices, APC takes congnisance of cost of production but not of return to each rupee invested which may often be more than 100 percent. As such, under the garb of higher cost of producion, the procurement prices are forced to be fixed at a higher level than before and made to contribute to inflationary tendencies.

The agricultural price policy of post-independence era seems to have failed to protect the interests of the rural poor, such as marginal farmers and landless labourers. Higher procurement prices give a spurt to foodgrains prices and make things hard for the poor whose bulk of earnings go to the purchase of foodgrains. Since they do not have any marketable surplus so that they could benefit from enhanced procurement price, they pay through their nose for their livelihood.

The agricultural price policy has to be reoriented in a meaningful fashion blending production incentives and the consumer safeguards in a more balanced manner.

AGRICULTURAL PRODUCTION AND GOVERNMENT POLICY* : Although 70% of the population of India is engaged in agriculture, pressure of population on cultivated land resources, recurring droughts, irregular monsoons and insect plagues , have affected agricultural production quite often. During 1951, India faced a food deficit of 2 million tonnes. The First Five Year Plan, therefore, did its level best for achieving self-sufficiency in food supplies, Planned agricultural reorganization, assisted by favourable climatic factors, made it possible to increase foodgrains production by 11 million tonnes during the first Plan period. As a result of this, near-self-sufficiency conditions prevailed on the food front and food rationing and control virtually disappeared during the last phase of the First Plan. The nation was happy. But this

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* Gosh Alak,' Indian Economy : Its Nature and Problems, Vol.- I The New Book Stall, Calcutta, 994, pp. 189-90.

good fortune did not last long. Weather king became moody once again. Monsoons were irregular. Food imports again made their ugly apperance. Food prices soared up; the Second Plan's agricultural targets proved too modest and had to be revised soon. During 1957-58, there was a decline in the output of foodgrains of about 10% mainly as a result of drought in large parts of the country. In 1958-59, however the food crop was quite large - 75.5 million tonnes or 20% more than in 1957-58. But, due to irregular weather conditons food production again declined and stood at 71.8 million tonnes in 1959-60. Things, however, improved and total food production during 1960-61 (i.e. the last year of the Second Plan) stood at 81 million tonnes.

FOODGRAINS PRODUCTION TRANDS (1961-95) : We find that foodgrains production as a whole showed no increase during 1961-62, remaining at about 81 million tonnes, the level of the last year of the Second Plan. Foodgrains production during 1962-63 and 1963-64 remained stagnant around 80 million tonnes. The position substatially improved during the next year but again deteriorated appreciably during the last year of the Plan. The total output of foodgrains, which remained at about 80 million tonnes both during 1962-63 and 1963-64, rose to the level of 88 million tonnes during 1964-65, then came down steeply to the low figure of 72 million tonnes in 1965-66 and increased slightly next year (i.e., 1966-67) and stood at 74.2 million tonnes. Two successive years of drought and scanty rainfall made the agricultural scene extraordinarily depressing and areas like Bihar faced calamitious conditions. As against the average annual rate of growth of 6% expected for agricultural production the actual growth was only about 2% annum during the Third Plan.

During 1970-71 things considerably improved but in 1971-72, because of unfavourable weather conditions, agriculture received a sharp set-back and there was an actual overall decline in foodgrains output.

Foodgrains production came down to 105.2 million tonnes in 1971-72. Next in 1972-73 foodgrains production sharply fell to 97.2 million tonnes. An acute shrtage of foodgrains raised food prices sharply and aggravated the inflationary sitution. Incidentally, it should be noted that agricultural production as a whole kept in line with the Fourth Plan projections in the first two years of the plan. The fourth plan envisaged a 5% annual rate of growth for the agricultural sector. The total foodgrains production was 104.6 million tonnes during 1973-74. In short, the fourth plan witnessed a growth rate around 3% per annum in the agricultural sector. In 1974-75 foodgrains production fell to 99.8 million tonnes. 1975-76 was a good year and we produced 121 million tonnes of foodgrains. But mainly due to an erratic monsoon the foodgrains production in 1976-77 fell to 111.2 million tonnes which meant that there was shortfall of about 10 million tonnes compared to 1975-76. But in 1977-78, because of fovourable weather conditions, agricultural production received a big boost and foodgrains production was as high as 126.4 million tonnes (including an excellent rice production of 50 million tonnes). In fact, in the last year of the Fifth Plan (i.e., 1977-78) we exceeded the Plan target for foodgrains production which was fixed at 125 million tonnes. In 1978-79 we could produce 131.9 million tonnes of foodgrains. After the bumper crops during 1977-78 and 1978-79 (i.e., two years in succession), we faced severe drought conditions in main parts of the country during 1979-80. As a result, production of foodgrains fell from the high figure of 131.9 million tonnes in 1978-79 to 108.9 million tonnes during 1979-80.

In 1980-81 foodgrains production showed a marked improvement and stood at 129.6 million tonnes. In 1981-82 we produced 133.1 million tonnes of foodgrains. But, production came down to the low figure of 126.9 million tonnes in 1982-83. As a result of favourable weather conditions, we achieved in 1983-84 a record production of 152.4 million

tonnes which was quite close to the Sixth Plan's target of foodgrains production. In fact, the Sixth Plan target of foodgrains production stood at 153.6 million tonnes. But due to severe drought conditions in various parts of country, the output of foodgrains recorded a fall of about 4% during 1984-85 and stood at 146.2 million tonnes . Mainly due to the fall in foodgrains production and a generally poor performance of the agricultural sector during 1984-85, the national income growth rate was 3.5% when the average growth rate during the Sixth Plan period stood at 5.3 percent. The foodgrains output in 1985-86 was 151 million tonnes, as against the Seventh Plan's target which ranged between 178 to 183 million tonnes. In 1989-90 when the Seventh Plan ended, foodgrains production stood at 171 million tonnes. In the first year of the Eighth Five Year Plan (1991-92) the foodgrains production is estimated to be 172.5 million tonnes as against the target of producing 210 million tonnes by the end of the plan period (i.e., in 1996-97).

Indian Agricultural Planners should remember that, during the first three and a half (35 year) decades of the Indian planning experiment, institutional changes in agriculture were not quite up to the mark and as a result of this, though the theoretical structure of comperhensive agricultural planning was available in the plans, it could not be put into practice. What is urgently needed in the sphere of agricultural planning is an effective transformation of the social structure into an institutional framework which would appreciably increase agricultural productivity. For this purpose, comprehensive organizational effort, thorough teamwork and effective follow up arrangements are absolutely essential. As the reorganisation problem was not thoroughly tackled at the grass roots, one or two irregular monsoons could upset our performance on the agricultural front inspite of the fact that a Green Revolution has occurred in Punjab, Haryana and adjacent areas. A case in point is the sliding down of foodgrains production from 152.4

million tonnes to 146.2 million tonnes in the last year of the Sixth Plan mainly due to the failure of monsoon in certain parts of the country. The Government should realize the urgency of the agricultural reorganization problem and draw up a new agrarian policy, based on thorough institutional changes, for the "dynamization" of the rural sector. A Crop Insurance programme should also safeguard the farmers against crop failures.

SUMMARY OF PROPOSALS : Let us now summarize our policy proposals. (1) A system of buffer stock operations should be evolved as soon as possible in such way that fluctuations around the trend are evened out, but the trend itself is not interfered with. The operations are meaningful only in the context of a free market. (2) Though buffer stock operations, as per the method sugguested, do not necessarily require announcement of ceiling and floor prices, it is necessary to announce in advance minimum support or guaranteed prices based on the average price of the last 3 years. If the stocks purchased under this scheme are more or less than required under the buffer stock operations scheme, the difference can be made good by sale or purchase respectively in the open market. (3) Vulnerable classes of population need to be protected against high food prices. Buffer stock operations do not meet their interests in so far as they do not affect the trend of prices. Grains for these classes can be secured either by procurement through open market purchases which are then to be sold at a subsidy financed by general revenues or, by compulsory procurement of part of marketable surplus from farmers, at less than market prices. The latter amounts to a disguised taxation on food producers, but it is arbitrary or inequitable in incidence and may discourage the progress of affected crops. A rational and progressive tax structure for rural areas has to be soon evolved, part of the proceeds of which could finance the cost of subsidised public distribution based on open market purchases. (4)

Zonal restrictions are unnecessary and may even be harmful for the success of both buffer stock operations and procurement.

These measures (i) would eliminate fluctuations in prices arising from fluctuations in production; (ii) would not deny the incentive of free market prices to farmers; (iii) would soften the impact of inflation on the most vulnerable consumers; and (iv) would not disrupt normal trade and would not lead to black marketing and horading .

As regards policy implications for other crops, it is usual to state that price policies should be such as to achieve a desirable crop-pattern. The problem of relative crop-prices and crop-pattern, however, is not so actue in the face of the problem of achieving increase in the production of all crops. The emphasis should be to increase productivity, rather than to shift acreage under cultivation. In the case of crops other than foodgrains, the necessity of a public distribution system through fair price shops becomes less marked because, they are less basic than foodgrains in the consumption pattern.

It may be recalled that it is the purchasing power or the demand side which has a greater impact on the prices of these crops than fluctuations in production. This would mean that though buffer stock operations may be set up to meet extreme situations, measures restraining demand will be essential if price rise is to be checked. But it is precisely this task which is most difficult and many of such demand restraining meausres may not be feasible or effective. Speculative elements also play their part and the role of forward trading also needs to be studied in this respect. A system of minimum support prices will be necessary for these crops as well, based on the same principle as in foodgrains. As it is the market prices which determine the crop pattern, the prices of competing crops need not enter the fixation of support prices.[1]

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1. M.L.Dantwala, ' Minimum Price for Farm Produce' , Agricultural Situation in India, Aug. 1965.

CONCLUDING REMARKS : We can arrive at some conclusions from our discussion of the review of food price policy in India. It has often been stated that this worked to the disadvantage of farmers and is too obsessed with interests of consumers. If this is taken to mean that there was no long-term scheme of supporting farm prices at resonable levels in the event of bumper crops and that there has been no progress in such supplementary help as crop insurance scheme in event of crop failures, the charge made is very largely true. Through public distribution alongwith harrasing schemes of compulsory procurement have been the prominent fetures of food policy all designed to meet the consumer interests, the awareness that there are great omissions in respect of protecting farmer's interests is to be found only in the remote corners of policy maker's minds at least till recently. But even after Agricultural Prices Commission started regularly recommending minimum support prices, these prices have been fixed at such low levels that in times of real need they do not become useful. If the charge against price policy is taken to mean that it concentrated on keeping down the prices of foodgrains to the exclusion of others, we have no evidence to prove it. There is no evidence of any deliberate attempt to keep foodprices low relatively to the prices of other agricultural commodities or the price manufactures. Attempts to check prices have been made equally in the case of all commodities.

Perhaps no other feature of food policy in the past was so starkly vivid as the failure to institute buffer stock operations on a long term plan. The tendency till recently was to rush up and enhance procurement in scarcity years to meet the needs of public distribution and be complacent whern the situation relaxed. Even imports were utilized largely for the same purpose and not for building up buffer stocks. Though awareness of this shortfall has dawned on the authorities now, there is still a long way to go.

The failure to evolve the institutions of buffer stock operations has been only a manifestation of a major characteristic of policy in the past - its adhoc nature, the tendendcy to react to a situation impulsively without a stable and long term policy in view and without much thought to all implications and consequences of actions taken. Of course there has been a considerable change in such attitude after 1964, with the setting up of Agricultural Prices Commission and the Food Corporation of India which are expected to promote a long-term policy. But vestiges of the past still continue and the A.P.C. have not been bold enough to come out against them which may only be obsessions or pet ideas of the governments - Central or State. These are the polices of working the so-called National Food Budget through compulsory procurement and Zonal restrictions. Even here especially in the case of zones, there have been too many shifts in their pattern and the habit of trial and error (the same trials and the same errors) which characterized the past continues today. Lot of dust has been raised recently with the recommendation of A.P.C. to lower procurement prices. That this recommendation has not been accepted by the States has raised several protests. The whole problem need not have been there at all. There have been several assumptions in this controversy: that it is our sacred duty to continue with compulsory procurement; that public distibution for which this procurement is needed shall continue to be as extensive as before; and that it is the procurement prices which affect in a big way the general price level and the cost of living. There is no need for any of these assumptions and the procurement could be and should be at market prices coupled with a scheme of floor prices and buffer stock operaions.

Policy measures in India have never gone so far as to eliminate free market forces. This is so in spite of the zonal restrictions, compulsory procurement, monopoly procurement in some states, and

regulation of private trade by means of licensing traders, raids on their stocks and reguisition banning of forward markets and even imposition of ceiling on prices.

Whenever attempts ahve been made to fix statutory ceiling prices they have failed. Attempts to act within the market mechanism have priced to be a greater success.This has been especially born out from the experience of state trading in 1958-59.

Ultimately no policy measure to hold down prices can be as effecvtive as a rapid rate of increase in agricultural production. On the eve of the formulation of the Second Five-Year Plan Vakil and Brahmanand sharply reminded the policy maker that availability of wage is a powerful limitation on any programme of indistrialization.[2] We could see that the rates of increase in the production of agricultural commodities were significantly lower than required. The price that we have to pay for this failure was substantial in terms of the rise in cost of living. The country has also to face the paradox of recession amidst inflation, largely as a result of failure to take note of intersectoral balances. Let not the recent record improvement in foodgrains production induce any sense of complacency. Whatever be the way of calculating demand, it is far from being fulfilled adequately. With a even greater pace of industrialziation than before such a problem will continue to be faced, unless the imbalance itself is removed.

/SUGGESTIONS FOR FUTURE POLICY : Before proceeding to discuss the recommendations for future policy, it is worth discussing the official plans regarding foodgrains production during the Planning Period (i.e., 1951-97). The Planning Commission has rightly pointed out that "there exists a big gap between production potential and actual production of

2. C.N.Vakil and P.R. Brahmanand, Planning for an Expanding Economy, Vora, 1956.

various crops" and that it is necessary and should be possible to bridge this gap.

The Plan document lays special emphasis on the production, distribution maarketing and pricing of pulses. The Plan document concedes the extremely poor rate of growth of pulses production. However, " recognising the importance of the pulses in the diet of the people and with a view to filling up the gap between its demand and supply and the scope for import being limited, a special thrust on raising pulse production has been given during the Planning Period. The stratetgy for achieving this increase in production will consist of (1) introduction of pulse crops in irrigated farming systems (2) bring additional area under (i) short duration varieties of urd. moong etc. in rice follows by utilising the residual moisture in rabi season; and (ii) in summer season with irrigation after oil seeds, sugarcane, potato and wheat; (3) inter-cropping of arhar in soyabean, bajra, cotton, sugarcane and groundnut both under irrigation and unirrigated conditions; (4) multiplication and use of improved pulse seeds (5) adoption of plant protection measures; (6) use of phosphatic fertilizers and rhizobial culture (7) improved post-harvest technology (8) public polices including pricing and marketing of pulses; and (9) organisation of "pulse crop villages" in various blocks both in irrigated and rainfed areas in order to promote an integrated approach to production, procurement and marketing of pulse crops based on the best available know-how.

In this thesis, a well argued case has been made for incentive producer price to boost production and these should be in real terms i.e., the ratio of prices received and paid by farmers should induce greater production. If production expands through high support prices employment and income will also increase simultaneously. But, this may

SOURCE : Based on the documents of Five Year Plans (1951-1997).

increase food prices without consumer subsidy and thereby reduce effective food supply for both the urban and rural poor, who are the net purchasers of food. In view of this the question of offering consumer subsidy in our country may also explored. For this purpose, as a first step consumer subsidies may be given to those food stuffs - i.e., wheat and pulses in India - which are consumed by the poor in greater quantities. If possible preferred cereals like rice should be channelled through the open market for consumer price stabilisation rather than subsidised public food distribution. Secondly, as a long term objective, the cost of calories from various food items may be worked out first, and on the basis of which a price policy may be developed that supports the consumer particularly those belonging to weaker sections in obtaining adequate calories from the cheaper sources. This may also provide the necessary nutritional bias to the foodgrains policy and reduce subsidy expenditure on the part of the government.

Additional employment and income for rural poor may be of greater advantage than food subsidy under the public distribution system. Releasing public stocks for open market supplies so that greater price stability is maintained, while funds earmarked for subsidy may be reallocated for rural income and employment generation and building of infrastructure that directly supports production and employment opportunities for the rural poor may be considerd. Rural works programmes may be made more effective in enhancing food supply and improving the distribution thereof.

It has been observed that, at present, the available rural credit is monopolised by the better-off sections of the community. Small farmers require credit to release their land and other assets which are mortgaged to the village money lenders or landlords. A need has arisen to give consumption credit in lean months and during harvest failures

Under multiple cropping system, greater protection for more labour intensive crops and reduced price incentives for mechanisation may be necessary to increase employment potential. Switch over to high-yielding varities may also generate additional man-days of employment per unit of land.

Price supports should prevent the seasonal decline of price during the post-harvest period. They should be effective at the level of the producers and not the traders and millers. Prevention of post-harvest losses, improved communication, procurement of processed rather than unmilled moisture-laden foodgrains, and greater price incentives for more labour intensive crops are all essential ingredients of an effective price support policy.

Input prices may be linked with efficient utilisation, reduced cost of procurement and distribuition and timely availability of inputs. Timely availability of low cost rural credit to small farmers enables them to market output at supported prces and obtain inputs at market prices. The choice between price subsidies and direct investment for increasing food production should be directly weighed. A lagre scale food-for works programme would not only enhance food supply but also build up the necessary infrastructure for accelerating domestic food production. The limited budgetary resources should be diverted as far as feasible to enhance production rather than subsidise consumption.

It is contended that, despite low level of food production in India, an equitable and efficient distribution system would have greatly reduced the sufferings caused by food shortages among a large section of the population. The zoning system, by restricting the flow of food from surplus to deficit areas, creates vide variation in food prices between states. The speculative hoarding of foodgrains, often finaced by commercial banks produces large profit to middlemen and owners of warehouses at the cost of both the consumer in cities (who pay high

prices) and the small producers at the village level(who are for sell and the small at the time of harvest). While rationing system is largely confined to urban areas, there is a need for protecting the village poor also by extending it on a large scale to the country side. An intensive policy operation against the black marketing is essential for both ensuring an equitable distribution of food, and also for providing stability to food prices. The key problem the country faces is not the shortage of food but the loopholes in the food distribution system.

High prices may not be in the interest ofthe economy. High food prices would affect food cosumption pattern. The poor would be worst effected. With regard to subsidies, the Indian farmer is already being assisted by government subsidised water and fertiliser. Land texes are very low. Moreover budgetory constraints will continue to limit government outlay subsidies.

Food prices could have been more stable if there has been better timing of imports and government stock movements. However, India cannot also afford to kep heavy stock as national grain reserve since the storage cost and interest costs (at the rate of 12.5 a year) would be considerable. It may be therefore incumbent on the part of the Government to rely on imports rather than national grain reserves to meet emergencies. But this again heavily depends on whether India could be assured of access to world grain supplies at reasonable prices, as well as international credit to help pay for emergency imports whenever the need arises. As things stand today, this option involves high risk as there is a serious risk of recurring world-wide foodgrains shortages. A certain amount of fluctuation in production is unavoidable. In fact these minor shortfall to the tune of 3 to 4 million tonnes is being met at present partly by buffer a sharp decline in foodgrains as it had happened to the tune of 17 million tonnes

during 1965-66 and 10 million tonnes in 1976-77. To avoid this type of serious crisis, India may plead for the international system of foodgrains reserve which would help to maintain food shipments in periods of world-wide shortage. In addition to this India may also explore the possibility of taking advantage of IMF credit facilities to finance emergency food imports. If adequate international arrangements can be worked out, India can reduce the nationl grain reserve to not more than 10 million tonnes capacity.

Thus a dynamic price policy should take into account (1) price received and paid by the farmers (2) fertiliser-grain price ratio, (3) producer support price, input subsidies and total government subsidy expenditure, (4) cost of credit and access there to of the small farmer and role of institutional and non-institutional credit with regard to agricultural supplies, (5) real wage rates over the years and national average and differnces in such rates in between high-growth and low-growth areas, (6) estimates of additional man days of employment generated, (7) government food distribution system, food pricing policy and its impact in terms of lessening seasonal and inter year fluctuation, & (8) regional price differentials as between low and high growth areas and influence of government policies thereon.

In the pre-green revolution period, owing to the persistence of severe rural commodities, particularly foodgrains, the terms of trade (at free market prices) in general turned favourable to agriculture. Agricultural price policy was concerned in this period mainly with the procurement of part of the foodgrain surpluses from the farmers at prices lower than the free market prices with a view to protecting the consumers, especially in the urban areas.

In the post-green revolution period, however, agricultural price policy became increasingly producer-oriented. The proportion of the marketable

surplus of wheat and rice procured from the farmer by the public agencies, at predetermined procurement prices, increased steadily, which helped to prevent a dip in market prices in years of good harvests. With the progress of the green revolution and the concentration of surpluses in a few regions, the need to protect farmers through such a policy became increasingly important. Despite this, the terms of trade for agriculture became slightly unfavourable during the Eighties (until 1988-89), indicating that part of the benefits from rising productivity on account of technological change were passed on the consumers. This was particularly so in the case of rice and wheat, the demand for which is relatively inelastic.

The Commission on Agricultural Costs and Prices, constituted in the mid-Sixties, continued to provide expert advice to the government on price policy in the high of the prevailing cost of production, variations in supplies in relation to demand and overall price movements in the country as well as in world markets. In practice, prices fixed by the government were in quite a few cases higher than those recommended by the commission. In a developing economy like India, the non-price measures for raising agricultural output such as provision of a basic infrastructure like irrigation and power and extension of new technology by making available to the farmers high yielding seeds and fertilizers are far more important than incentive prices. Also, in a democratic policy faced with a growing population and widespread poverty, the need to supply essential commodities like foodgrains to the consumers at affordable prices assumes high priority. It is fair to conclude, therfore, that agricultural price policy in India has, by and large, tried to balance the interests of producers and consumers in the light of overall goals of development.

A STRATEGTY FOR AGRICULTURAL REFORMS : Agricultural growth need not any longer be limited by the goal of self-sufficiency, but it may benefit

from trade, so as to raise the overall rate of economic growth, modernise the rural sector, and generate employment opportunities. The emphasis must shift to new activities with favourable domestic and export demand, such as dairying and other animal products, horticulture, and floriculture in order to boost agro-processing and to enhance employment opportunities, particularly in dry-land areas.

The favourable incentive effects of liberalising trade by increasing the prices of foodgrains have to be reconciled with the need to protect the vulnerable sections of society by strictly targeting food subsidies to the poor through the public distribution system. Further, the design and implementation of poverty alleviation programmes can be improved by involving the beneficiaries, local level (panchayati raj) institutions, and voluntary organisations. The opening up of the economy will improve the terms of trade for agriculture.

SELECT BIBLIOGRAPHY

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BOOKS

Agrawal, A.N., Indian Agriculture, (Problems, Progress and Prospects), (Ghaziabad, Vikas, 1980).

Alagh, Y.K., G. S Balla and Amit Bhaduri, Agricultural Growth and Manpower, Absorption, in India in Labour Absorption, in India Agriculture, (Bangkok, ILO 1978).

Arthur Lewis, Economic Survey, 1919-39, (London, OUP, 1949).

Audrey Richards, Land Labour and Diet, (North Rhodesia, OUP, 1939).

Bapna, S.L., Economic and Social Implications of Green Revolution : A Case Study of the Kota district, (Vallabh Vidyanagar, Sardar Patel University, 1973).

Bartseh, W.H., Employment Effects of Technologies and Techniques in Asian Crop Production : A Survey of Evidence, (Geneva, International Labour Office, 1973).

Basil, P.C., Agricultural Problems of India, (New Delhi, Vikas, 1977).

Battacharjee, J.P., Studies in Indian Agricultural Economics, (Bombay, Tenth Interational Conference of Agricultural Economists, 1958).

Batra, M.M., Agricultural Production:Prices and Technology, (New Delhi, Allied Publishers, 1978).

Bhatia, B.M., India's Food Problem and Policy Since Independence, (Bombay, Somaiya, 1970).

Black, J.D., Introduction to Economics of Agriculture , (New York, Macmillan, 1953).

Black, J.D.,(ED), Research in Prices of Farm Products,(New York, SSRC, 1933).

Black, J.D., Krifer, " Further of Food and Agricultural Policy," (New York, McGraw Hill 1948).

Brien Lockwood, P. K. Mukerjee and R. T. Shand, The High Yeilding Varieties Programme in India, Part 1, (Delhi, The Planning Commission of India and The Australian National University, 1971).

Chakrabarti, K. Santi, The Behaviour of Prices in India, 1952-70 : An Empirical Study, (Delhi; Macmillan, 1977).

Chandler, R.F., The Scientific Basis for the increased Field Capacity of Rice and Wheat "in T.K. Poleman and D.K. Feirbenirn Food, Population and employment, (New York 1973).

Chopra, R.N., Evolution of Food Policy in India, (New Delhi, Macmillan, 1981).

Desai, B.M., An Evaluation of some Aspects of Hybrid Maize Programme in Dohad Taluka, (Vallabh Vidyanagar, AERC, 1967).

Desai, D.K., Impact of Farm Tractorization on Empolyment and Productity, (Ahmedabad, Indian Institute of Management, 1973).

Economic Intelligence Service, Basic Statistics Relating to the Indian Economy (two volumes)(Bombay CMIE, 1981).

Economic Intelligence Service, Sixth Five Year Plan : 1980-85, (Bombay, CMIE, February 1981).

Edgar, Thomas, An Introduction to Agricultural Economics, (London, Thomas Nelson, 1949).

ESCAP, Food supply and Distribution in Asia and the Pacific : Medium-Term Outlook and Regional Co-operation (Special Study by the Secretariat), (Bangkok, UNESCO, 1982).

Fred H. Sanderson and Shyamal Roy Food Trends prospects in India, Washington, Allied Publishers, 1979).

Gibs, B.D., "Agriculture and the Price Mechanism" in Studies in the Price Mechanism (Ed, by T. Wilson and Andrews),(Oxford, Clarendon, 1951).

Gupta,R.P., Agricultural Prices in Backward Economy, (Delhi, National 1973).

Gotfriend Haberier, Prosperity and Depression, Part III, (Geneva, League of Nations 1941).

Handerson, H.D., Inter-war Years and Other Paper, (London, OUP, 1955).

Hayami, Yujiro and Ruttan W. Vernon, Agricultural Development : An International Perspective, (Baltimore, Johns Hopkins Press, 1971).

Himansu Roy, Tea Price Stabilisation (Calcutta, Indian Case-World Press, 1965).

Ingrid Palmer, Science and Agricultural Production, Geneva, United Nations Research Institute for Social Development, Report No.72.8, 1972).

Jha, B.V., Agricultural Price Stabilisation in India, (Calcutta, Shat Publications).

Johi S.S., Mechanization, Labour Uses and Productivity in Indian Agriculture (Mimeo), (Ohio, Ohio State University 1974).

Johnston, J., Econometric Methods, (New York, Mc Graw Hil, 1963).

A.S. Kohlon and G. Singh, Social and Economic Implications of Large Scale Introduction of High Yielding Varieties of Rice in the Punjab with reference to the Gurdaspur District, (Ludhiana, Punjab Agricultural University, 1973).

Khusro, A.M., "Economic Theory and Indian Agricultural Policy" in Ed. Khusro A.M. Readings in Agricultural Development, (New Delhi, Allied Publishers 1968).

Knight, Sir Henry, Food Administration in India, (California Stanford University Press, 1954).

Krishna Bharadwaj, Production Conditions in Indian Agriculture- A Study based on farm Management Surveys (Cambridge, Cambridge University Press, 1974).

Krishna, R., Agricultural Price Policy and Economic Development in South North, H.M., and B.F.Johnston (Eds.). Agricultural Development and Economic Growth, (Ithaka : Cornell University Press, 1967).

D. Kumar, Land and Caste in South India, A Study of Agricultural Labour in the 19th Century. (London, Cambridge University Press, 1965).

Lalith K. Sen, "Role of Irrigation in Intergrated Area Development Planning" presented to the Seminar on the Role of Irrigation in Agricultural Development (RIAD), (Bangalore, Institue of Social and Economic Change, 1974).

Lawrence, R. Klein, A Text Book of Econometrics, (Englewood Cliffs, Prentice Hall, 1974).

H. Laxminarayan, The Social and Economic Indications of the Large Scale Introduction of High Yieldding Varieties of Wheat in Haryana, (Delhi, Agricultural Research Centre, 1973).

League of Nations, Economic Stability in the Post war Period, (Washington, LON, 1945).

Lele, J.Uma, Foodgrain Marketing in India, Private Performance and Public Policy (New York, Cornell University, 1971).

P.S. Majumdar, Development Opportunities of Small and Marginal Farmers, Mimeo , (Brighton, Institute of Development Studies, 1977).

Moore, R. John, Johl, S. S and Khusro, A. M. Indian Food Marketing, (New Delhi, Prentice Hall, 1973).

Mukhopadyay, Sudhin, K Sources of Variation in Agricultural Productivity; A Cross Section Time Series Study in India, (Delhi, Macmillan, 1976).

Nadkarni, M.V., Agricultural Prices and Development with Stability, (Delhi, National Publishers, 1973).

Nadkarni, M.V., Socialist Agricultural Price Policy - A Case Study of GDR, (New Delhi, People's Publishing House, 1979).

Nerlone, Marc," Estimation and Identification of Cobb Douglas Production Functions" (Chicago, Rand McNally and Company, 1965).

Ojala, E.M., Agriculture and Economic Progress, (London, OUP, 1952).

Okhawa, K and Rosovsky, H.," The Role of Agriculture in Modern Japanese Economic Development" in Ed. C. Eicher and L. witt, Agriculture in Economic Development, (New York, McGraw Hill, 1964).

S.M. Pandey, Development of Marginal Farmers and Agriculture Labourers, (Delhi Shri Ram Center of Industrial Relations and Human Resources, 1974).

G, Parthasarathy and Abraham, V. Tractorization of Agriculture : Employment and Productivity (An Empirical Enquity in West Godavari District), (Waltair, Andhra University, 1974).

Potluri Rao and Leroy Miller, Applied Econometrics (Englewood Cliffs, Prentice Hall, 1971).

Radhakrishana, R & Murthy, K.N.,Food Demand Model for India, (Ahmedabad , Sardar Patel Institute on Economic and Social Research, 1978).

Richard, G., Lipsey and Patel , D , Steiner, Economics (Sixth Edition), (New York, Harper and Row, 1981).

Robert. C. Ros, an Introduction to Agricultural Economics, (New York, McGraw Hill, 1951).

Rao. C.H. Hanumantha , Technological Change and Distribution of Gains in Indian Agriculture, (Delhi, Macmillan, 1975).

Rao V.M. Food, (Delhi, Macmillan, 1975).

Roshan Singh The Social and Economic Implications of the Large Scale Introduction of High Yielding Varieties in Foodgrains (Wheat) in Muzzaffarnagar, U.P., (Geneva, UNRISD, 1973).

Shah, C.H. and Vakil, C.N. (Eds) Agricultural Development of India - Policy and Problem, (New Delhi, Orient Longman, 1979).

Shah, N.R. A Study of the Hybrid Bajra Programme in the Kaira District, Gujrat, (Vallabh Vidyanagar AERC. 1967)

Shah, N.R. Evolution of the High Yielding Varieties programme, Khariff, 1968 (A Study of IR & Rice in Kamal District, Haryana), (Delhi, AERC, 1968).

Shakuntala Mehta, Instability in Indian Agriculture in the Context of the New technology (prepared for International Food Policy Research Institute, Washington), Published by Bombay, CMIE, February 1982).

Sharma, R.K., Economics of Tractor Verses Bullock Cultivation (A pilot study of Haryana). (Delhi, AERC, 1972).

Sharma R.K., And Gupta,D.P. Impact of Decline in Fertilizer use during 1974-75 (A study in Selected District of Haryana, Punjab and U.P., (Delhi, AERC. 1975).

Shepard. G.S., Agriculture Price Analysis, (IOWA, Iowa University Press, 1941).

Shultz, T.W., Agriculture in an Unstable Economy, (New York, MacGraw Hill 1945).

Shultz, T.W. Production and Welfare of Agriculture, (New York, Macmillan, 1949).

Shultz, T.W. Transforming Traditional Agriculture, (Ludhiana, Lyall Book Depot. 1970).

Shultz, T.W. Economic Crises in World Agrticulture, (An Aebor, University of Michigan Press, 1965).

Sinha, R.P. Food in India, (Bombay, Oxford University Press, 1961).

Thomsen. F.L., Agriculture Prices, (New York, McGraw Hill 1952).

Thomsen, & Foole, Agriculture Prices, (New York McGraw Hill 1952).

Tyagi, S.S., Evaluation of the Small Farmers Development Agency, (A pilot study in Ambala District), Mimeo, (Delhi, AERC, 1973).

Willam H.Nicholls The place of Agriculture in Economic Development in Carl Eicher and Lawrence will (Ed.) Agriculture in Economic development, (New York, McGraw Hill, 1964).

Dhondyal, S.P. — Problems of Indian Agriculture, Friends Publications, Meerut, 1984.

Patnaik,K.U.S. & Anbumozhi, K. — Price Behaviour of Indian Agricultural Commidities , Distorery Publishing House, New Delhi, 1991.

Ghosh, Alok, — Indian Economy its Nature and Problem, The New BooK Stall, Calcutta, 1994.

Singh,A. & Sadhu, A.N. — Agriculture Problem in India, Himalaya Publishing House, Bombay, 1986.

Jalan, Bimal, — The Indian Economy Problems and Prospects Penguin Books India (P) Ltd. New Delhi, 1992.

Nadkarni, M.V. — Agricultural Prices and Development with Stability, National Publishing House, Delhi-6 1973.

JOURNALS

Acharya, S.S., — Parity Issues in Pricing of Foodgrain output, Indian Journal for Agricultural Economics, 36. (4), Oct.- Dec. 1981. pp. 73-80.

Adelman, — I and Moris, C.T., An Econometric Model of Socioeconomi and Political Change in Underdeveloped Countries, American Economic Review, (Dec. 1968).

Ashok Gulati — Remunerative Price. Issues Related to Farm Produce, Economic times, 24.12.1981, (Part I), 25.12.1981 (Part II).

Ashok Gulati and Rakesh Sharma — "Farmers Agitation and Economics of Agricultural Price Policy" Indian Almance, 1 (2) March 1981, pp. 41-47.

Ashok Rudra, — A Majed and B.D. Talic, "Big Farmers of Punjab" Economic and Political Weekly, (Bombay, September 27, 1969).

Balbir Sihag — Estimation of Income and Price on a Statewise basis, Indian Economic Journal, 36 (3), Jul. Sept. 1981, pp. 27-35.

Basavapunniah. M., — On Remunerative Prices and the present struggle A Critique of the Critics, People Democracy, 5 (19), May 10, 1981, p. 3.

Basavapunnaiah, M., — A little on the critics of peasents Agitation, People's Democracy 5 (22). May 31, 1981, p. 3.

Bhatia B.M., — Dual Pricing of Farm Inputs to Help Small Farmers Kurushetra, 28 (11) March 1, 1981., pp. 4-7-

Bhatia, M.S., Intra Sectoral Parity Between Cost Price and Income in Agriculture, Indian Journal Agricultural Economics. 26 (4), Oct. Dec. 1981, pp. 101-08.

Bokare, M. G., Prices of Farm Products, Mainstream 19 (29), March 21, 1981, pp. 22-24.

Commerce Research Bureau, Crop and Commodity Sruvey, Commerce, 142 (3645), Bombay 25 April, 1981), pp. 359-64.

Commerce Research Bureau, Crop and Commodity Survey, Commerce, 142 (3636) Bombay , 21, Feb, 1981, pp. 426-32.

Dandekar, V.M., Minimum Support price for Foodgrains - Guidelines for a Policy and Programme Artha Vikas, 2 (1), Jan. 1966.

Dantwala, M.L. Agricultural Policy in India since Independence. Indian Journal of Agricultural Economics, 31, (4), Oct. -Dec. -1976.

Dantwala, M.L. Principles and Problems of Agricultural Price Determination, Journal of the Indian Society of Agricultural Statistics, 18 (1), June 1966.

Deepak Lal, Agricultural Growth Real Wages and the Rural Poor in India,"Economic and Political Weekly, Review of Agricultural Numbern (Bombay, June, 1976).

Devnathan Movement for Higher Agricultral Prices - A Comment, Economic and Political Weelky, 16 (14), 4th April 1981, pp. 635-36.

Gupta, G.S., Price Policy and the Small Farmer, Commerce 142 (3639) 14 March 1981, pp. 583-88.

John K. C. Cash Crop Politics in Kerala,Times of India, (Bombay, 15 August, 1981).

Kahlon A.S., "A Positive Price Policy for Agriculture" Economic Times of India, May 22, 1981).

Kahlon A.S., "The Inflationary Pressure-Agriculture not main Factor" Times of India, November, 11, 1981.

Kahlon A.S., " Fixing Agricultural Prices-How the Commission Calculates" Times of India, Oct. 13, 1981.

Kahlon, A.S. " A New Deal for Farmers," Times of India, July 4, 1981.

Kahlon A.S., and Geroge, M.V., " Fair Return of Farmers - Quality Control Essential" Times of India, October 13, 1981.

Kahlon A.S., and Dhar, T.S., " Fixing Agricultural Prices - Industry can not serve as a model," Times of India, April 20, 1981, and April 21,1981.

Kripa Shanker — " Question of Agricultural Prices ", Mainstream 19(29), March 21, 1981, pp. 25-26.

Krishanji, N., — " Inter- Regional disparities in per Capita Production and Productivity of Food Grains, Economic and Political Weekly, Special Number, 1975.

Lakdawala, D.T. — "Growth Unemployment and Poverty", Yojana, 22 (3) February 16, 1978.

Leonard, Joy, — Food and Nutritional Planning Journal of Agricultural Economic, (January 1973).

Lohar, N.S., — and Bansode, S.D., A Positive Price for Agriculture, Mysore Economic Review, 66 (11), November 1981, pp.9-10.

Maria Saleth, R., — Farm Produce Price : The Mexican Approach, Economic Times, Jan. 1, 1982.

Minhas, B.S., — Growth with Stability : A Framework for Agricultural Planning Economic and Political Weekly, Special Number, July, 1968.

Minocha, A.C., — " Agricultural Price Policy and Farmers Agitation in India." Political Change, June 4, 1981, pp.74-86.

Mody Ashok — " Growth Distribution and the Evaluation of Agricultural Markets", Economic and Political Weekly, 17 (2) , January 1982, pp.25-38.

Dubhashi, P.R., — Price Support Politics, Economics Times, (Suppl) 30th May, 1981, Part I, pp.1-5.

Editorial, — "Farmer Price Crash-The Task Ahead", Capital, 182, (4545), February 8, 1979, pp. 91-92.

Editorial, — " Higher Price for Paddy," Commerce, 138, (3547), June 9, 1979, pp. 84-85.

Editorial, — Pricing of Farm Products, Eastern Economist,76, (13), 27 March 1981, p. 841.

Editorial, — Promoting Wheat Revolution Eastern Economist, 20th April, 1979.

Editorial, — Wheat Price Puzzles, Eastern Economist,72 (19), 11 May 1979, pp.962-63.

Editorial, — " APC Recommendations on Wheat" Eastern Economist, 77, (19), 6 November 1981, 860-61.

Editorial, — " Dual Price for Food Grain Procurement " Economic & Political Weekly, 14, (17) 26th April, 1979, pp. 763.

Editorial, — "Need for Gaution", Economic Times, 11 May 1979.

Editorial, " An unwise proposal", Economic times, 16 May 1979.

Editorial, " Wheat Price Pulses ", Economic Times 16 May 1979

Editorial, " Procurement Prices", Economic Times, 24 May, 1979.

Editorial, "Economic Times", 24 September 1979.

Editorial, "A Class Analysis", Seminar, 24 November 1981, pp. 21-24.

Editorial, "Agricultural Prices Cimmission under pressure" Southern Economist, 20 (14) 15 November, 1981, pp. 1 and 2.

Editorial, "Redefining APC's Role", Times of India, 11 November, 1981.

Fernandes George "A Beginning", Seminar, 167, November 1981, pp. 25-26.

Grewal, S.S., and Bal, H.S., Impact of Green Revolution of Agriculture Wages in the Punjab, Indian Journal of Agricultural Economist, (Conference Number) (Bombay, July-September 1974).

Gulati, I.S., and Krishnan, T.N. Public Distribution and Procurement of Foodgrains : A proposal, Economic and Political Weekly, 10 (21), May 24, 1975.

Tyagi, D.S., " Agriculture Price Policy in India", Eastern Economist, (Annual Number), 78 (3), June 1982, pp. 145-55.

REPORTS

India, Planning Commission, First Five Year Plans (New Delhi, Publication Division) (I plan to VIII Plan including Annual Plans)

India, Manager of Publications, Annual Report of the Food Corporation of India, (New Delhi, FCI, 1965).

India, Manager of Publications, Estimates of Area and Produtiion of Principal Crops in India 1977-78, (New Delhi, Directorate of Economics and Statistics, 1979)

India, National Commission on Agriculture, Interim Report on Agricultural Price Policy, (New Delhi, February, 1975)

India, Manager of Publications, Reports of Foodgrains Policy Commission, (Delhi, Minsitry of Agriculture, 1966).

India, Ministry of Food & Agriculture, Report of the Agricultural Prices Commission on Price Policy for khariff for 1967-68 Season," (New Delhi, GOI, 1967)

India, Department of Agriculture and Irrigation, "Farm Prices in Principal Crops 1970-71, (New Delhi, Controller of Publication GOI 'Directorate of Economics & Statistics) 1971.

India, Department of Agriculture and Irrigation : From Prices of Pricipal Crops : 1974-75, (New Delhi, Controller of Publications, GOI, Directorate of Economics and Statistics), 1976.

India, Ministry of Food and Agricultre, Agricultural Price Policy in India, (New Delhi, GOI, 1966)

GOI, Economic Survey-Various Years

GOI, Reports of the Commission for Agricultural Costs and Prices, Dept of Agricultural Crop Ministry of Agricultural -193-94 & 194-95.

NEWS PAPERS

1. The Economic Times - New Delhi
2. Finiancial Expresss - New Delhi
3. The Hindustan Times - New Delhi